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THE MEDICAL BRIEF

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EDITORIALS.

OFFENSIVE METHODS BY HEALTH BOARDS.

THE spy system has never been in much favor with Anglo-Saxon peoples. It may be necessary, in certain cases and under certain conditions, to employ it for the detection of crimes and criminals; but it is always regarded, by right-thinking persons, as being at best a sort of necessary evil, only to be made use of when all other means fail, and in which no right-feeling man or woman cares to take an active part. It is, in short, in the mind of the decent citizen, a species of dirty work, only to be employed where absolutely necessary to circumvent equally dirty work with its own weapons.

All of which we have said before, in these pages, and are led to reiterate by certain events which have recently occurred not a hundred miles from the office of this journal. The spectacle of a City Health Officer hiring paid decoys to induce a Christian Science practitioner to render advice to a presumably sick person, for which the decoy made payment with a marked bill, as though he were entrapping a suspected embezzler or forger; thereupon dragging the practitioner—a lady—to the police stations and subjecting her to the indignities of disrobing and searching her like a common thief; such a spectacle, we say, is not calculated to inspire any great respect, either in the public or the professional mind, for organized medicine. Such a procedure is justly regarded by all right-minded persons as an outrage upon common decency, and quite naturally arouses public sympathy upon the side of the victim of such brutal methods. In the case in question the prosecuting attorney declined to issue a warrant for the Christian Science healer, we think, very rightly. And we are sure that the entire medical profession repudiates with disgust and indignation the uncalled-for action on the part of the Health Officer.

Aside from the natural disgust that such third-degree methods arouse in the minds even of those who discountenance what they believe to be the mischievous activities of Christian Science and similar cults, it should be pointed out that they defeat the very ends to which they are supposed to be directed. Nothing furthers an obscure or struggling cause like persecution. It serves only to arouse public sympathy and respect, even for people and causes who are not in themselves deserving of sympathy and respect. In cases such as the one we have cited the original issue is entirely lost sight of in the overshadowing spectacle of oppression and persecution of the weak by the strong. By all means let us expose what we believe to be the fallacies and evils of these health cults, so far as they are fallacious and evil; and use our utmost efforts, in a legitimate fashion, to protect the public against their delusions. But let us confine ourselves to the limits of common decency, and avoid the foolish mistake of fanning into more vigorous life, by the

winds of persecution, the flame which it is our purpose to quench. As a general proposition, we should say, the efforts of the medical profession in this direction should be confined to educating the public. Legal prosecutions would better originate with the public who are injured by irregular and unqualified practitioners.

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WHERE THE HEALTH CULT ARGUMENTS ARE WEAK.

NO ONE has a livelier regard than we for the principle of medical liberty; nor, we think, has anyone been more frankly outspoken in defense of that principle. Indeed, our frankness has more than once drawn upon us the criticism of some of our readers and of our contemporaries in the field of medical journalism. Hence it may well be imagined that, even while we represent the side of the medical profession in all matters between it and the public, we have a good deal of sympathy with the public standpoint, especially where questions of liberty of thought or action are at issue. We have, for example, frequently expressed our opinion that the prevailing system of State licensing of medical practitioners is neither the wisest nor the most equitable way of regulating the practice of medicine. But it does not therefore follow that we can swallow all the specious sophistry that finds utterance in the protests of the various healing cults and their followers against the legislation which provides for such licensing. We beg to point out to these enthusiasts in the cause of medical liberty that their arguments, as generally presented (and they are about the same whenever and wherever one hears them), contain two or three fundamentally erroneous premises which considerably vitiate the conclusions and appeals that are made from them.

In the first place, we are asked to consider the injustice of a legislative enactment which compels a free American citizen to seek the medical service of a certain class of medical practitioners under penalty of fine or imprisonment. So far as we are aware, there is no statute on the statute-book of any State in the Union that compels any such thing. So far as our acquaintance with the medical practice acts of the country goes, they do not refer at all to the layman who seeks medical service, but altogether to the individual who offers and renders the service. If that service be rendered by a practitioner—of whatever sect or creed—who has not fulfilled the requirements of the State, there is, so far as we are aware, no penalty attaching to the person who engaged him, but only to the unqualified practitioner himself.

We are perfectly aware that the rejoinder to such a statement will be that one condition amounts to the other. If none but "regular" practitioners are permitted to practice, then the public is *de facto* compelled to engage the services of a "regular," or go without. Perfectly true if that were indeed the case. But that brings us to our second point, namely, that the medical practice act has nothing whatever to say about the system or school of medicine that its licensees shall practice. Its provisions relate wholly to qualification and preparation—to fitness for practice. Having satisfied these stipulations of preparation and fitness, there is nothing in the medical practice act to hinder a physician from practicing any sort of system he chooses. To be sure, there is always the possibility of having to justify one's system of treatment in a suit for malpractice or criminal carelessness, but that is a contingency which pertains under the common law, not under the medical practice act, to every practitioner, not to any particular school,

It is surely very unreasonable for our health-cult friends to object to a legislative enactment requiring that the practitioner of an art pertaining to the human

body be thoroughly educated in all that belongs to the structure and conditions of that body in health and disease, whatever system of therapy he may purpose applying to the latter. Let it be granted, for the sake of argument, that in the matter of therapeutics a regular medical course is, to say the least, opposed to the beliefs of the follower of the new creed. Well, therapeutics is a comparatively small proportion of the curriculum of a medical education, and is regarded, even by the schools themselves, as a more or less elastic subject; it becomes less and less dogmatic every year. Indeed, the legislative committee of the American Medical Association has for many years been recommending the exclusion of the subject of therapeutics from State Board examinations on the very ground of its comparative unimportance, and for the stronger reason that it will place the different schools of medicine on an equal footing and do away with this very objection of the lesser sects.

And, as stated, there is no obligation upon any practitioner to observe any special system of therapy when he has demonstrated his fitness to conduct his own practice. It is surely splitting hairs to repudiate all the rest of the important curriculum for the sake of this one branch. Such elastic phases are found in every applied science and art. A mechanical engineer, in his technical training, doubtless receives a good deal of instruction, and is required to pass an examination in certain aspects of the care and repair of engines with which he does not at all agree, and which he subsequently discards for what he considers better procedures. But neither he nor anyone else therefore questions the necessity of his technical training in order to properly equip him for the construction and care of engines. In these elective matters he is allowed individual freedom when he has demonstrated his *general* fitness for his vocation.

This is all that the medical practice acts of the various States demand—*a general fitness to deal with the human body and its ailments, based upon a thorough knowledge of its anatomy, physiology, and pathology,* and even more generic knowledge of the prevailing status of therapeutics. There is nothing in such a requirement to interfere with liberty of individual creed and practice—nothing but a reasonable protection of the public health and safety. To object to it, even admitting the slight discrepancy in the therapeutic requirement, is, to our mind, very unreasonable on the part of our irregular friends, and does not appeal to the sensible, practical mind. If they would evince a little more disposition to vie with the regular medical man in his painstaking study of the *essentials* of his craft, their "conscientious" differences of *opinion,* in the matter of treatment, would command more sincere and serious attention.

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THE BEAM THAT IS IN THINE OWN EYE.

LO, THE poor editor of the *Journal of the American Medical Association!* He has, as Sam Weller said about Mr. Fogg, of the celebrated law firm of Dodson & Fogg, "worked hisself into a 'igh state of excitement" over the deplorable spirit of indifference with which the vigorous campaign of so-called therapeutic reform, carried on during the past six or seven years from Dearborn Avenue, seems to have been received by the medical profession at large. He complains that some of the leading members of the profession are allowing themselves to be featured as contributors to medical journals, "whose pages fairly bristle with pharmaceutical frauds and humbugs, *many of which have been exposed in The Journal of the American Medical Association,*" and that these distinguished names

have actually been used by the journals in question as a commercial asset to obtain subscriptions. And he plaintively asks, "In all seriousness, do the members of the American Medical Association want the propaganda for reform in proprietary medicines to be continued, or do they wish to see therapeutics slip back into the unscientific and chaotic condition that existed before the fight against fraudulent proprietaries was started?"

His wailful jeremiad concludes with this significant paragraph: "For nearly seven years the fight against proprietary frauds has been waged. What are the visible results of this campaign? The chief one is the unprecedented commercial success of those medical journals whose advertising pages are open to anything that will not debar them from the post office. In other words, the work of the Council on Pharmacy and Chemistry has resulted in driving every pharmaceutical fraud into the advertising pages of those medical journals that are published for revenue only."

We have characterized this paragraph as a significant utterance; but its true significance does not seem at all to have suggested itself to the editor of the *Journal of the American Medical Association*. He takes the attitude of the soldier recruit who complained that all the rest of the company were out of step. He seems to assume that, because he and his subservient Council on Pharmacy and Chemistry, have decreed certain remedies to be frauds, they must be entirely discarded by the whole profession, in spite of the fact that actual clinical experience of thousands of physicians have proven them to possess therapeutic value. Any man with a less complacent obsession of his own infallibility, coming to a startling realization that a crusade which, under his direction, had been waged with the widest publicity and almost fanatical zeal for seven years, without producing any appreciable response from the great body of men in whose interests it was supposed to be directed—so that even the "leading members of the profession" were ranged on the side of indifference—any ordinarily-constituted man, we say, under such circumstances, would seriously question, not the profession, but himself, first as to whether the campaign were really the important public measure that it was alleged to be, and second whether the methods and spirit of its conduct had been such as to vitiate whatever there might be of praiseworthy intent in its purpose.

It is absurd for the editor of the *Journal* to accuse the entire medical profession, or even the greater part of it, including many of its leading members, with a moral turpitude to which he and his immediate associates are the bright and shining exceptions. It is equally gratuitous and insulting to characterize this same great body of physicians (which he does by implication) as a lot of ignorant fools who are blind to their own interests and easy prey to frauds and snares, which only the all-seeing eye in Dearborn Avenue detects and exposes. In short, when the fanatic fails to arouse a response in the public sentiment, it is both cheap and fatuous to blackguard the public for its shocking hardness of heart. But that is what fanatics invariably do.

If the editor of the *Journal* and his medico-political associates will practice a little self-scrutiny, will look carefully and honestly into their own motives and methods, laying aside, for this one occasion only, the myopic glasses of self-interest and self-esteem through which they habitually view every subject, they may find ample explanation of the state of affairs which the editor of the *Journal* deplores, without calling in question the intelligence and honor of an entire profession. No right-thinking, self-respecting physician, or journal, but approves and coöperates in a legitimate crusade against fraud and deception, whether it pertain to medicines or anything else.

No right-thinking, self-respecting physician, or journal, on the other hand, but resents an arrogant attempt to establish an autocratic censorship over individual thought and conduct, and discountenances persecutory and abusive practices even against persons and principles which one may regard as in themselves objectionable. The trouble with the political clique in control of the American Medical Association, as we have frequently had occasion to point out, is a "vaulting ambition which o'erleaps itself." In its fanatical zeal—which is in reality a deliberately calculated political scheme—to establish a monopoly and foreclose a mortgage on everybody and everything pertaining to medicine, it has stooped to every sort of underhand and unfair method of persecution, until it has actually defeated its own purpose, and aroused antagonism against itself instead of against the interests it was attacking. And the result has been, as the editor of the *Journal* bitterly complains, that the conflicting forces have been driven in just the opposite way to that which was intended. Still the clique does not learn its lesson, but blames the situation on the profession at large. "The time has come," says the editor of the *Journal,* in closing, "when those who are in the front must know whether or not the medical profession wants this fight continued, and above all, whether its members are willing to make some sacrifices themselves." We beg leave to paraphrase this final paragraph. The time has come when the rank and file of the profession must know where "those in front" are really intending to lead the profession, and above all, whether they are willing to sacrifice their selfish schemes of political power and aggrandizement for the genuine interests of the profession at large. Unless and until they do, they will receive from the profession at large no more responsive co-operation in any movement they may inaugurate than they confess they have received in this particular campaign.

Camphor.

By J. A. Burnett, M. D., Marble City, Okla.

CAMPHOR is a drug whose powerful properties and therapeutic possibilities have been greatly neglected. It is unquestionably one of the most efficient, and, when intelligently used, the most adaptable, circulatory stimulants in the materia medica, and is, moreover, a powerful sedative to the central nervous system. Some of these uses are brought out by the author of this paper. The article does not pretend to be an exhaustive treatise on Camphor, but is designed rather to call the attention of the practitioner to the potentialities of this all-too-little regarded drug.

There are several old-time remedies that are really new to many young physicians, and camphor is one of them. Camphor is derived from *cinnamomum camphora,* which grows chiefly in China and Japan. When taken in the mouth, camphor produces a burning taste. Camphor is so volatile that when exposed for some time it disappears. It is combustible, burning with a flame and much smoke. The chemical formula of camphor is $C_{10}H_{16}O$. An artificial camphor is made by synthesis from oil of turpentine.

There are six official preparations of camphor:

Camphor water, dose 1 to 4 drachms; average dose, 2 drachms.

Spirit of camphor, dose 5 to 20 drops; average dose, 15 drops.

Camphor liniment.

Camphor cerate.

Monobromated camphor ($C_{10}H_{15}BrO$), dose 1 to 5 grains; average dose, 2 grains.

Camphoric acid — $C_8H_{14}(COOH)_2$ — dose 10 to 20 grains; average dose, 15 grains.

Camphor is incompatible with butyl-chloral hydrate, chloral hydrate, chromic trioxide, hydrochloric acid, menthol, phenol, potassium permanganate, resorcin, salol, salicylic acid, thymol, etc.

If camphor is taken in large doses it produces epileptiform convulsions, preceded by vertigo, roaring in the ears and delirium. The pulse becomes rapid and feeble, the skin livid, cold, and covered with sweat.

Potter says: "As many as 200 grains have been taken without fatal results, yet 6 or 7 grains have produced extreme drowsiness and weakness of the pulse. Twenty grains laid up an Alpine guide for a day, and half an ounce of the spirit caused profound symptoms; including epileptiform convulsions and severe headache."

The results produced by such small doses as Potter mentions must be rare, however. Camphor has a reputation for uncertainty in therapeutic action. Camphor is employed as a nerve sedative or antispasmodic, especially for nervous women and children, although its antispasmodic action is inferior to our old-time remedy, asafetida. Camphor has been used in cholera and diarrhea, but is of little value, only when combined with more positive agents. As a carminative, and for intestinal flatulence, camphor is inferior to asafetida.

The hypodermic use of camphor is of value. In the *New York Medical Journal* of September 25, 1910, Dr. M. F. Goldberger, in writing on the treatment of peritonitis, says: "Camphorated oil, used hypodermically, from 15 to 30 minims every two or three hours, or oftener if necessary, we have found of infinite value as a cardiac stimulant, pending the absorption of the fluid from the proctolysis, and at all times when there were any signs of cardiac weakening."

Potter says: "Subcutaneous injections of camphor in doses of 1 grain dissolved in 15 minims of olive oil are employed with excellent results in pneumonia, typhoid fever and other conditions, when collapse is imminent. In fibrinous pneumonia, these injections produce a depression of about one degree in the temperature, and greatly ameliorate the general condition. They are also employed with benefit in the treatment of phthisis during the period of softening, rendering the patient more comfortable, and prolonging life. Camphor administered in this manner is not well borne by young children, even in minimum doses."

In the *Medical Record* of January 28, 1911, in an article, "Camphor in Large Doses in Pneumonia," by Dr. Leonard Weber, he reports giving 30 grains of camphor hypodermically every day for four days. A fresh 20% solution of camphor in oil of sweet almonds was injected, two hypodermic syringefuls into the outer circumference of the thighs every two hours until eight had been given each day.

Camphor is used externally as a stimulant to indolent sores. The spirit of camphor is a useful application for abortive purposes when used over boils in their early stages, if repeated two or three times a day for a few minutes at a time, and camphorated oil applied after this.

Equal parts of camphor and chloral hydrate triturated together makes a good application in superficial neuralgia and many painful conditions. This compound will dissolve morphine sulphate readily, 20 grains to 2 drachms.

Here is Dr. Gray's miraculous catarrh remedy:

Phenol crystals	30 grams
Chloral hydrate	30 grams
Camphor gum	30 grams
Olive oil	90 grams

Triturate the chloral and camphor to a homogeneous liquid, then add the acid and mix with the oil.

One drop on the end of the or in a small shallow tube put high into the nostril and energetically inhale, closing the opposite nostril meanwhile, thus treating both nostrils two or more times in twenty-four hours as needed.

The following is said to be Dr. W. J. Sandy's local application:

Gum camphor	2 ounces
Chloral hydrate	4 drachms
Oil wintergreen	4 drachms
Fld. ext. cannabis ind	1 drachm
Alcohol, q. s. ad	3 ounces

Sig.: Use externally.

Dr. Sandy states that this is an excellent application for the relief of pain, whether it be from a neuralgia or local inflammation from any cause, and will often, by its use, necessitate the use of a hypodermic to relieve pain. It is a beautiful green, oily liquid.

The following is Dr. H. L. True's favorite formula for inhalation for catarrh, headache, cough, etc.:

Oil pine needles	2 drachms
Guaiacol	2 drachms
Camphor gum	4 drachms
Menthol	6 drachms
Oil eucalptus	1 ounce

M. Sig.: Use in an inhaler.

A glass inhaler should be used, one containing a sponge or a little absorbent cotton. I consider the most important use of camphor is in combination with other remedies for internal, external or hypodermic or inhalant use.

A PATRONIZING young lord was seated opposite the late James McNeil Whistler at dinner one evening. During a lull in the conversation he adjusted his monocle and leaned forward toward the artist. "Aw, y' know, Mr. Whistler," he drawled, "I pahssed your house this mawning." "Thank you," said Whistler, quietly. "Thank you, very much."—*Exchange.*

The Medical Treatment of Duodenal Ulcer.*

By T. Joseph Dunn, A. M., M. D., New York City.

Professor of Materia Medica and Clinical Professor of Medicine in Fordham University School of Medicine; Visiting Physician to Fordham Hospital.

DUODENAL ulcer has of late passed so completely into the sphere of the surgeon that it is both refreshing and hopeful to hear it once more discussed from the standpoint of internal medicine. Dr. Dunn not only treats of it from this standpoint, but argues a strong case for the use of the old therapeutic stand-by in its medical treatment, namely, nitrate of silver. His own experience, as recounted in part in this article, has been so favorable with this time-honored remedy as to give great encouragement to our readers in their use of it. We shall be glad to hear from other quarters upon this subject, whether in line with or contrary to Dr. Dunn's experience.

In taking up the consideration of the treatment of duodenal ulcer, we must remember that it is both a medical and surgical disease.

In a more or less large proportion of cases, the indications for operation are so clear and distinct, or even imperative to save life, that no other line of conduct can be considered. But these are precisely the cases where medical treatment has been pursued for too long a time. If we wait until a severe hemorrhage or perforation threatens the patient's life, we may be accused of having exposed the patient to danger unjustifiably.

In the other class of cases, which are clearly surgical, namely, those in which, after many recurring attacks, adhesions or cicatrization cause a stenosis at the pylorus, we have subjected the patient to years of ill-health that might have been avoided.

It is important, therefore, in the beginning, to determine the cases to which medical treatment is applicable, and also to determine how long such treatment should be carried out.

The manifestly surgical cases will declare themselves.

When we consider the history of duodenal ulcer, and the sources from which we have gained our knowledge, we might readily conclude that the medical treatment of the disease has always failed. We owe practically all that we know today of the condition to the work of the surgeons, especially to Moynihan and the Mayos. This knowledge has been gathered in the past ten years in the operating room, and not on the autopsy table.

These surgeons have operated on several hundred cases, all of which were of long duration, usually several years. If, therefore, medical treatment failed in most of the cases that we know about, one might conclude that it is always useless, and that surgery should be invoked immediately after the diagnosis is made. That, however, is not the case, and it is not the view of the men who have taught us so much. The Mayos say: "There is no conflict between medicine and surgery in this field, as only the cases that fail to yield to a reasonable amount of medical treatment should be considered surgically."

And Moynihan, in the preface to his work on duodenal ulcer, has this to say: "One result of this surgical discovery must be that the physician, now knowing well that which formerly was not suspected, namely, the attachment of the symptoms he recognizes to an organic lesion, will insist on a much stricter and a more prolonged medical treatment, and

*Read before the Bronx Medical Society, October 11, 1911.

in this way it is probable, and is sincerely to be hoped, that some at least of the cases which now seek help at the hands of the surgeon may be permanently relieved of their sufferings by this greater care, and escape the need of operative attentions."

It is fair to assume that medical treatment often fails because of the lack of a correct diagnosis. We know that up to ten years ago, duodenal ulcer was regarded as an extremely rare condition, and the diagnosis almost impossible. Today we know that it is quite common, and the diagnosis can be made with a great degree of accuracy and facility.

Having determined that the indigestion from which the patient suffers, his pain, his eructation of gas, his hyperacidity, are due to this definite cause, the treatment resolves itself into the treatment of a peptic ulcer. This treatment, of course, will be partly dietetic and partly medical. There are several peculiar features about this disease, and one is this: that in the early stages, at least, the cases are all walking cases. They are not, as sometimes happens in gastric ulcer, bed patients. In fact, I think it would be difficult to persuade a man who thinks he only has nervous indigestion to go to bed. Nor do I think it necessary for him to do so.

As for the diet, we have another peculiarity of the disease to consider. Contrary to what we find in gastric ulcer, the patient with the disease in his duodenum has first of all a good appetite, as a rule; and, secondly, the food he takes relieves his pain, and he knows it. He has his distress when the stomach is empty, and has found out for himself that taking food, a biscuit, or a glass of milk, gives him relief. The diet, therefore, I think should be more liberal than what is allowed in the corresponding gastric condition. Any soft, bland and unirritating kind of food may be permitted, while solids should be forbidden, and, of course, everything that tends to increase the acidity. This hyperacidity is one of the most prominent symptoms of the disease; it stands in a causative relation to it, and is the source of the pain, which may be very distressing.

Coming down, now, to the medicinal treatment, we find this situation: Most of these sufferers have already dosed themselves with large amounts of sodium bicarbonate, which gives them temporary relief. They have taken charcoal tablets, and other digestive tablets, without much benefit. Some of them know about bismuth, or have used magnesia as an antacid. I have never seen any but very temporary relief from their use. The ordinary digestive mixtures do not seem to be of any benefit. Muriatic acid, given after eating, by increasing the acidity of the acid chyme, merely increases the distress.

The drug which I had found most useful in my gastric cases, of which I knew more than about the duodenal, was nitrate of silver. It had come to be my standby, and I had a good deal of confidence in it. It occurred to me about a year ago that one of the newer silver salts, being less irritating than the nitrate, would be more adapted to an irritable, inflamed or ulcerated stomach, and, of course, duodenum. Following out this thought, I concluded to use argyrol internally. I selected this particular preparation because of its extensive use in ophthalmic and genito-urinary conditions. I reasoned that a preparation which was soothing to an inflamed conjunctiva would show the same results applied to the gastric mucous membrane. I was not disappointed. The results in several cases of gastric ulcer and acute gastric catarrh in which I tried it first were more than satisfactory. So, when about a year ago I saw a case of duodenal ulcer, I tried the same preparation with eminently satisfactory results. In the past year I have used it in eight or ten cases of duodenal ulcer. Some were cases of long standing, months or years, some of more recent date. The ages ranged from 22 to 70,

men predominated in the usual proportion. My method was to give the drug in capsule form, and in doses ranging between four and five grains. Fortunately, my patients could swallow capsules, so that the administration was easy. I ordered it taken about two hours before eating, so that the solution would have an opportunity to exert a soothing and healing effect on the sore. The results as I noted them were as follows: the hyperacidity came under control in about forty-eight hours; the severe distress ceased in one day; patients who walked the floor at night were able to sleep undisturbed almost from the beginning of treatment. The localized soreness usually persisted for about ten days. The patients improved in spirits, and quickly regained strength and color. I usually kept up the treatment for two weeks, sometimes three weeks. I was guided entirely by the relief of the symptoms. The more recent the case the quicker did I get results. Where the history indicated a first attack of recent date the relief of symptoms was very prompt. Where, however, the case was one of several recurring attacks going over a period of several years, as in one of my cases, it required from a week to ten days before the patient was relieved of his symptoms.

As to the permanency of the cure, if I may use that word, I can not say as yet. We know that duodenal ulcer is chronic and recurring over a long period of years. The average duration of the Mayos' cases was over 12 years, and freedom from attack from two years after operation is regarded by them as a cure. My cases only go back about one year, but during this time there has been no recurrence so far. It will take more time and more cases to prove this point. So far, all that I can say is that this method of treatment is perfectly safe, there has been no argyria in any of the gastric or duodenal cases that I have treated, and the results, as far as the relief of symptoms and prompt return to normal health are concerned, far surpass any other method that I know of.

CORN OIL.

W. L. Cummings, in the *Physicians' Drug News,* tells us that this product is made from the seed of Indian corn (*Zea Mays*). There are two processes of manufacture: (1) in which the seed is pressed before it is used for the manufacture of starch, which produces an oil of a golden yellow color and (2) where it is recovered from the residue of the fermentation vats where the corn has been used in the production of alcohol.

This oil is almost without drying power, neither boiling nor the addition of lead when boiling giving it definite drying properties. If it is heated, however, and a current of air passed through it, and manganese borate mingled with it, it dries after a fashion. It is largely used at present in the manufacture of what are known as corn-oil rubber substitutes. It also has a limited application in soaps, such as the soft soaps used in washing automobiles, being cheaper than linseed oil for this purpose and giving practically as good results. In my own experience, says the author, I have found it admirably adapted to this purpose, either alone or in combintion with resin. These soaps may be loaded quite heavily with silicate of soda and when properly made are of a transparent amber color, possessing excellent cleansing properties.

Corn oil was proposed at one time as a suitable material for use in making commercial linseed oil substitutes, but its lack of drying power renders it less suitable for this purpose than various other materials. It is, however, used to a limited extent for adulterating linseed oil.

For most of the purposes to which corn oil has been put, soja bean oil provides a still cheaper and quite as satisfactory material. Practically the only exception to this rule is for the production of rubber substitutes.

The Chemistry, Physiology and Aesthetics of a Cup of Tea.

(From *The Lancet.*)

Caffeine Tannate as the Chief Constituent of Tea Infusion.

THE view that caffeine exists in an infusion of tea in the form of a definite compound with tannin is sustained by further experiments. In a previous article upon the subject* it was shown that when an infusion of tea (which always exhibits an alkaline reaction) was acidified with any acid a flaky buff-colored precipitate settled out, especially in the cold, which proved to contain chiefly caffeine tannate. Further, the proportion of caffeine to tannin in this precipitate was found to be 1 of the former to 3 of the latter, and the suggestion was that the compound consisted of 1 molecule of caffeine $C_8H_{10}N_4O_2$, with a molecular weight of 194, associated with 1 molecule of quercitannic acid $C_{27}H_{22}O_{17}$ with a molecular weight of 602. In the previous article the formula was wrongly given as $C_{20}H_{20}O_9$. The ratio of caffeine to tannin in such a compound would be 1:3·1. The following is an example of the analysis of this precipitate from a good Indian tea:

Caffeine	20.93%
Tannin	60.80%
Resinous and oily matters (by difference)	16.27%
Total	100.00%

The precipitate amounted to 9·84% of the tea used in the infusion. A further experiment gave the following results:

Caffeine	20.89%
Tannin	62.66%
Resinous and oily matters (by difference)	16.45%
Total	100.00%

It follows that the precipitate obtained on making an infusion of tea acid consists principally of caffeine and tannin in the ratio approximately of 1 of the former to 3 of the latter. The presumption is that caffeine tannate is the chief body thrown out of solution by the addition of acid.

When, however, this precipitate is removed by filtration and the filtrate is saturated with ammonium sulphate a further separation of buff-colored flakes takes place. On analysis these flakes show the following composition:

Caffeine	24.13%
Tannin	75.80%

$$\frac{\text{Tannin}}{\text{Caffeine}} = 3.14.$$

The ammonium sulphate precipitate amounted to 4% of the tea used in the infusion (5 grams in 400 cubic centimeters of just boiling water allowed to stand five minutes before pouring off). Calculation shows that this particular tea yielded a total of caffeine tannate of 12·26%. Of this total 8·26 was thrown out by mere addition of acid and 4·00% by subsequent saturation of the filtered acid infusion with ammonium sulphate. There is no point in separating caffeine tannate first by acidifying and next by saturating with ammonium sulphate. The whole can be thrown down at once by adding ammonium sulphate after acidifying the tea infusion with dilute sulphuric acid. When this precipitate is air-dried and sunk in a mixture of 1 of alcohol and 2 of benzene the caffeine tannate is separated from the excess of ammonium sulphate crystals and resins and obtained in a comparatively pure state. The solution of caffeine tannate in benzene-alcohol mixture readily yields its tannin to lead oxide (litharge), the caffeine being set free. To give an example, a certain tea (Indian) yielded a total precipitate by ammonium sulphate amounting to 11·60% when dissolved in

*The *Lancet*, January 7, 1911, p. 46.

benzene-alcohol mixture and evaporated to dryness and weighed. The following was the process: A definite volume of the alcohol-benzene solution of the caffeine tannate was evaporated over a weighed quantity of lead oxide. The dry residue was then made into a thick paste with water and extracted with chloroform, which was poured off and evaporated in a platinum basin. The residue from the chloroform represents the caffeine contained in the caffeine tannate. The wet lead oxide paste was then dried to constant weight and the increase of weight shown over the original amount of lead oxide weighed out was regarded to be due to tannin. In this way a residue of 11·60% obtained by evaporating the alcohol-benzene mixture to dryness gave on treatment in the way just described:

Caffeine	2.80%
Tannin	8.80%
Total (caffeine tannate)..	11.60%

With another tea the total caffeine tannate extracted from the ammonium sulphate precipitate by benzene-alcohol mixture was 12·80%, and the constituents found by lead oxide separation were:

Caffeine	3 20%
Tannin	9.60%
Total (caffeine tannate)..	12.80%

These experiments thus appear to establish that, complex as the composition of an infusion of tea may be, it at least yields a definite substance in the shape of caffeine tannate, the composition of which is constantly shown to be one part of caffeine with three parts of tannin.

The Preparation and Composition of Caffeine Tannate.

Caffeine tannate is a very interesting substance apart from its occurrence in tea infusion. It may readily be prepared by mixing aqueous solutions respectively of tannin and caffeine in the cold, when a milky fluid, sometimes with flakes forming according to the strengths of the solutions, is obtained. If a few drops of carbonate of soda solution be added to the mixture a clear pale yellow solution results. If next a slight excess of dilute sulphuric acid be added caffeine tannate separates in flakes which admit of washing to remove free caffeine or tannin as the case may be. These flakes may be dissolved in alcohol-benzene mixture (1 to 2). On evaporating the solution to dryness a crisp crust of caffeine tannate is obtained. If this residue is taken up again in benzene-alcohol and evaporated over a weighed quantity of lead oxide the two constituents are separated. On evaporating the benzene-alcohol and moistening the mass with water to a paste chloroform may be added which will extract the whole of the caffeine; the lead residue on drying to constant weight will give the amount of tannin as an increased weight on the lead oxide employed. To give an illustration: A benzene-alcohol solution of the precipitate obtained by adding acid to a solution of caffeine and tannin in weak carbonate of soda was evaporated to dryness. The weight was 0·1 gram. The residue was redissolved in benzene-alcohol and the solution so obtained was evaporated to dryness in a platinum basin containing 3·210 grams of lead oxide (litharge). The dried mass, after moistening, was extracted with chloroform. The residue (caffeine) from the chloroform, clean and white, weighed 0·025 grams. The lead oxide, after being exhausted with chloroform, was then dried at 120° C. to constant weight. The weight proved to be 3·287 grams, which represents a gain due to tannin of 3·287-3·210, or 0·077 grams. The 0·100 grams of caffeine tannate was thus split into 0·025 grams of caffeine and 0·077 of tannin, figures which account for the whole of the original substance taken, and which give the product 3·08 when the proportion of tannin is divided by the proportion of caffeine. Caffeine tannate is readily soluble in boiling hot water, but as the solution cools it turns milky. It is, however,

permanently soluble in water containing a little alcohol. If caffeine tannate be heated with a little water for some time it assumes the form of an oil.

It was next decided to add an excess of caffeine in solution to a known amount of tannin in solution. If tannin selects a definite amount of caffeine to form a compound it is evident that by estimating the remaining free caffeine in the mixed solution the amount that has combined with the tannin can be ascertained. Thus, 0·3 grams of caffeine in solution was added to 0·3 grams of tannin in solution, a few drops of carbonate of soda solution were added to make the mixture quite clear, and then dilute sulphuric acid was added in slight excess. Caffeine tannate readily separated in flakes from which a clear fluid could easily be poured off. The clear fluid was then repeatedly extracted with chloroform and the chloroform extractions were evaporated. The data and results were as follows:

Caffeine taken	0.3	gram.
Tannin	0.3	gram.
Calculated caffeine in excess, assuming that 1 of caffeine combines with 3 of tannin.	0.2	gram.
Caffeine in excess found	0.189	gram.

It is difficult to extract caffeine completely from a bulky aqueous solution, but the result shows an approximation to a combination of 1 of caffeine with 3 of tannin having been formed.

Next the precipitate obtained (caffeine tannate) was split up by lead oxide as previously described:

Caffeine tannate taken weighed.	0.284 gram.
Tannin found	0.214 gram.
Caffeine	0.075 gram.
Total	0.289 gram.

The evidence is here again strong in favor of the existence of a definite compound of caffeine and tannin, consisting of one of the former and three of the latter.

The reverse experiment was next tried —that is, an excess of tannin in solution was added to a known amount of caffeine in solution:

Tannin taken	0.30	gram.
Caffeine	0.03	gram.
Calculated excess of tannin=	0.21	gram.

The mixed solutions were saturated with ammonium sulphate and thrown upon a filter. The filtrate was exhausted with ethyl acetate and the extraction evaporated to dryness (we noted before that free tannin is soluble in saturated ammonium sulphate, but that caffeine tannate is insoluble). The ethyl acetate gave 0·205 gram free tannin against 0·21 calculated. The caffeine tannate formed was again split up by means of lead oxide, and there were obtained 0·10 gram tannin and 0·03 caffeine, a total of 0·13 gram caffeine tannate formed against a calculated 0·12 gram.

Caffeine Tannate Physiologically Considered.

We suggest that these findings are important from a physiological point of view, because it is highly probable that caffeine in a state of stable chemical union with tannin must differ very materially in regard to therapeutic action from the alkaloid in a free or uncombined condition, especially having regard to the fact that tannin serves to some extent as an antidote to most alkaloids, since it forms with them insoluble compounds. Similarly, tannin when combined with caffeine is a totally different thing from tannin in the free state. The astringent properties of tannin, for example, disappear when it is combined definitely with caffeine. It follows that tannin in combination with caffeine will not tan. A solution of pure caffeine tannate does not act upon gelatin or proteins, so that when tannin is combined with caffeine its incompatibility with these dietetic substances ceases, and its objectionable retarding action upon digestion accordingly must be modified. If these conclusions are correct it becomes of the utmost importance to determine whether in the enormously popular bev-

erage tea, caffeine or tannin exists in the free state or mutually combined.

We have already shown that to a large extent the teas which are regarded as of high quality by the merchant prove to yield infusions containing caffeine and tannin in the ratio of 1 to 3, and the strong inference is that such infusions contain neither free tannin nor caffeine, but neutral caffeine tannate. The merchant's view of quality would thus appear to accord quite happily with physiological considerations. He is guided, of course, chiefly by the flavor of the infusion, as well as by color and odor and general appearances. Both tannin and caffeine in the free state have characteristic tastes; the former is astringent and sour, the latter is bitter. A slight excess of caffeine in tea infusion is probably less objectionable than an excess of tannin, since the disagreeable qualities of tannin are more marked. An ideal infusion is one which contains both caffeine and tannin in 1 to 3 proportion, *i. e.*, caffeine tannate, neither constituent being in excess. This ideal is occasionally reached, but, generally speaking, most good teas contain caffeine in slight excess. Caffeine tannate, however, does not possess the qualities of its constituents; it has a peculiar flavor which is smooth and bland, not unlike a very delicate or lightly infused tea. It must be carefully borne in mind that in making these deductions we are not considering the chemistry of the leaf, but of its infusion made by pouring 400 c.c. of just boiled water upon 5 grams of tea and decanting after five minutes—a plan suggested by the tea-taster's method of assaying tea.

The Effect of "Stewing" Some Teas.

The desirable equilibrium may be disturbed by vicious treatment even of a good tea. If an Indian tea be boiled long enough or stewed on the hob a point is reached when tannin appears over and above the amount which can combine with the caffeine to form neutral caffeine tannate. Such an infusion presents the objectionable characters of tannin. When this infusion is saturated with ammonium sulphate the caffeine tannate as such is thrown out. If this is filtered off the excess of tannin will be found in the filtrate, from which it can be extracted by ethyl acetate. Thus the five minutes' infusion of an Indian tea showed a total tannin content of 9·24% and caffeine 3·70%. On infusing the same tea for one hour the tannin amounted to 16·12% and the caffeine 4·40%. In the five minutes' infusion, therefore, caffeine was in slight excess (0·38%) of the tannin, but in the one hour's infusion the tannin is in excess of the caffeine by 2·92%. In other words, 4·40 of caffeine if combined as tannate would mean in the combination 13·2 of tannin, when as a matter of fact the total tannin found was 16·12%.

The experience of making wholesome tea seems to have decided upon a limited time for making the infusion. This limit, in fact, appears to us to insist upon the infusion consisting as far as possible of caffeine tannate and upon the exclusion of an important quantity of free tannin or caffeine present. But even a five minutes' infusion of some teas may not approach this standard. Indeed, in view of our work upon the subject we are able to suggest a classification for teas as follows:

Good teas are those which on a five minutes' infusion yield only caffeine in the form of caffeine tannate to the infusion, neither caffeine nor tannin being in excess; and bad teas are those which yield on infusion for five minutes a tea containing in addition to caffeine tannate either caffeine or tannin, but especially tannin, in excess.

It is obvious from this classification that a good tea may be made a bad tea, but a bad tea can not be made a good tea, except possibly by very skillful blending. Excessive infusion will spoil a good tea, but a short infusion of a bad tea may be

as objectionable as an excessive infusion of a good tea. On physiological grounds, therefore, the buyer of high-quality teas runs less risk of digestive disturbance, provided he makes the tea properly.

These points are interesting in connection with the light types of tea grown in China. The short infusions of these teas commonly contain an excess of caffeine, which probably accounts for their bitterness. They are less rich than Indian teas, a fact which should make the use of Indian teas more economical, but the best types of them never show the presence of free tannin. A five minutes' infusion of a certain China tea showed a total amount of tannin of 4·60% and caffeine 2.80%. On the basis of the 1 to 3 relationship of caffeine to tannin in caffeine tannate it is evident that in this tea there is an excess of caffeine, viz., 1·27%, for the amount of caffeine that can combine with 4·60 of tannin is 1·53, making a total of 6·13% of tannate. As a matter of fact, the amount of caffeine thrown out as tannate when the infusion was saturated with ammonium sulphate was 6·48, which requires 1·62 of caffeine and 4·86 of tannin. In the five minutes' infusion, therefore, there was 1·27% of caffeine in excess. On infusing the same tea for an hour, however, the tannin then amounted to 7·14% and the caffeine to 3·20%. Caffeine is still in excess, for the amount combined as tannate is 2·38%, giving a difference of 3·2-2·38= 0·82%. Some China teas, therefore, are incapable of yielding free tannin, and these are invariably high-priced teas.

Analysis of Infusions of Various Teas.

In the following table will be found a series of analyses of infusions made with Indian, Ceylon and China teas respectively. The percentage results are based upon five grams of tea used in the experiment, to which were added 400 c.c. of just boiling water, the infusion being poured off after five minutes. The qualities of the teas from the merchant's point of view are indicated by the brokers' prices which are attached. It will be noted that, as a rule, the high-priced teas yield infusions containing a

Description.	Caffeine tannate determined.	Tannin combined with caffeine.*	Caffeine combined with tannin.*	Total tannin determined.	Total caffeine determined.	Caffeine not combined with tannin.	Tannin not combined with caffeine.	Brokers' price per pound.
								s. d.
Indian	8·54	6·41	2·13	6·80	2·56	0·43	0·39	7½
Indian	8·88	6·66	2·22	5·88	2·22	....	....	8
Indian	10·32	7·74	2·58	7·39	2·88	0·30	....	8¾
Indian	11·48	8·61	2·87	8·41	3·52	0·65	....	8¾
Indian	13·28	9·96	3·32	9·24	3·70	0·38	....	10½
Indian	9·60	7·20	2·40	8·73	3·20	0·80	1·53	11½
Indian	12·50	9·40	3·10	9·50	4·00	0·90	0·10	1 10½
Indian	13·36	10·02	3·34	10·92	4·32	0·98	0·90	1 10½
Ceylon	8·88	6·66	2·22	6·30	2·80	0·58	....	8½
Ceylon	9·12	6·84	2·28	7·14	3·04	0·76	0·30	10½
Ceylon	10·40	7·80	2·60	9·82	2·96	0·36	2·02	10½
Ceylon	11·76	8·82	2·94	8·82	2·96	0·02	....	10½
Ceylon	13·28	9·96	3·32	9·66	4·00	0·68	....	1 1
Ceylon	12·00	9·00	3·00	8·40	3·60	0·60	....	1 4
China	5·36	4·02	1·34	3·02	1·92	0·58	....	6½
China	5·60	4·20	1·40	4·87	2·72	1·32	0·67	8
China	7·60	5·70	1·90	5·04	2·72	0·82	....	9½
China	6·32	4·74	1·58	2·96	2·72	1·14	....	1 1
China	6·48	4·86	1·62	4·60	2·80	1·18	....	1 5

* Calculated.

balance of tannin and caffeine, and in general a larger amount of these constituents. The use of a high quality tea is therefore not only salutary but economical also. A very fine example of Indian tea is No. 7. The infusion contained as much as 4% of caffeine and 9·50% of tannin. There was only 0·1% of tannin uncombined with caffeine and 0·90% of caffeine uncombined with tannin. The price of this tea was 1*s.* 10½*d.* per pound. On the other hand, Indian tea at about half the price—11½*d.*—gave 8·73% of tannin and 3·20% of caffeine, and there was 1·53% of tannin not combined with caffeine, and the liquor was accordingly harsh and astringent, although the time of infusion was only five minutes. The same applies to the Ceylon teas; a tea quoted at 1*s.* 4*d.* per pound yielded no tannin over and above what is combined as tannate, while one tea quoted at 10½*d.* gave 2·02 tannin in excess. The tea at 1*s.* 4*d.* again yielded

3·60% of caffeine, while the tea at 10½*d.* gave 2·96. Ceylon teas, as a rule, show a more regularly balanced composition as regards the ratio of tannin to caffeine (3 to 1), a finding which would seem to show that Ceylon teas are all that can be asked for from a physiological point of view.

When we come to China teas there is again seen to be some relation between price and the percentage of caffeine. A cheap China tea, for example (6½*d.* per pound), gives 1·92% of caffeine, while one at 1*s.* 5*d.* per pound yields 2·80%. China teas, again, rarely yield an excess of tannin, but nearly always an amount of caffeine in excess of tannin, and caffeine appears to occur in China tea with some constituent other than tannin.

Blends and the Behavior of Tea with Different Waters.

So far we have been dealing with individual teas, but we now come to a consideration of blends. The aim of the blender is, of course, to produce a palatable tea and, more than that, to mix individual teas so that the whole shall be adapted to the peculiar requirements of different public water supplies. In doing this, does he unconsciously produce a mixed tea in which, whatever the drawbacks of the individual teas may be, a balance of caffeine and tannin somewhere near the ratio of 1 to 3 is effected? It is well known to tea experts that a tea which produces a pleasant palatable infusion with London water may easily be uninteresting or even possibly bad when made with, say, a very soft peaty water in Dublin or with the soft-water supplies of Plymouth, Aberdeen, Swansea and elsewhere. The consumer has the same experience. He will have made up his mind after considerable trial that a certain tea in his judgment is best, at any rate at home. So convinced is he that the tea is a good one that when he happens to travel he will take care to have the same tea with him, only to find out that outside his own district at home the tea becomes indifferent. In other words, he has found a tea which associates perfectly with the home supply of water, but which proves to go badly with waters of different quality. Hence the taster will always be careful to select a tea suited to a particular place, and it is invariably his plan to be sure of this by testing the tea with the actual water supplied to the neighborhood for which the tea is required. It is difficult to see here what guides him in this matter except it be flavor. The probability is that rich teas are more suitable for soft acid waters than for chalky waters. We know, at any rate, that an acid water will tend to neutralize the alkaline salts in tea which keep tannate of caffeine in solution; it would tend to throw caffeine and tannin in the form of tannate out of solution, and so weaken the infusion, whereas chalky water would have the opposite tendency and draw closely upon the available tannin and caffeine which are present in the form of tannate. This is a mere suggestion which may find little support in practice, but so far as we have examined blends deemed to be suitable for certain water the choice appears to be in the direction we have indicated. Thus in a blend intended for consumption in Dublin, where the water is soft and acid from the peat, the total caffeine tannate amounted to 13·20%, the caffeine and tannin being approximately in the 1 to 3 proportion, whereas a tea supplied to districts in Scotland where the water is soft, but not acid, the total caffeine tannate amounted to 8%, and a tea for Wales, where the water is again soft, but not so acid as Dublin water, the caffeine tannate amounted to 10·40%, while the blends supplied for chalky waters showed amounts of caffeine tannate varying from 10·4 to 11·60%.

In all cases it is interesting to observe that the blends showed a near approximation to the ratio of 1 to 3 of caffeine and tannin as in caffeine tannate, and

whatever the individual requirements of different districts may be, the taster seems to know when and how a combination of teas will give a satisfactory result. The varying alkalinity of teas may probably be a factor in the case. What exactly lies behind the choice of a tea to suit the requirements of different districts is a theme which is difficult to pursue on merely chemical grounds, for in addition to the varying chemical characteristics of different water supplies, there are colonies of people who collectively like a strong pungent liquor, while there are others who prefer their tea to be light and delicate in character.

The subject is by no means exhausted, but we submit that the foregoing investigation has thrown some new light upon the real character of tea infusion, especially in regard to correlating esthetic with physiological considerations. We have not concerned ourselves at all with the chemistry of the leaf, but with the chemistry of the cup of tea, and in our inquiry we have been assisted by devising new methods of examination. We hope that other investigators will be induced to approach the subject from this standpoint and append a short description of the analytical methods employed.

Methods of Analysis.

The Estimation of Caffeine Tannate—In all cases the infusion was prepared by taking five grams of tea and pouring upon the leaves just boiling water to 400 c.c. and leaving the infusion to stand five minutes. It was then filtered. For the estimation of caffeine tannate 200 c.c. of infusion was just acidified with dilute sulphuric acid and then saturated with ammonium sulphate and kept cold. The fluid was then filtered and the filtrate kept for the extraction with ethyl acetate of any excess of tannin that might be present, or of caffeine by means of chloroform. (It may be noted that a very rapid method of ascertaining whether tea infusion contains an excess of tannin consists in saturating the infusion with ammonium sulphate and filtering. The filtrate will contain any tannin present in excess of caffeine tannate which can be extracted by shaking with ethyl acetate separately and evaporating to dryness.) The precipitate in the filter was allowed to dry as much as possible in a current of air. The filter and its contents were then exhausted with a mixture containing 1 part of alcohol and 2 parts of benzene. The extracts were added together and made up to a definite volume (100 c.c.). A known measure of this (25 c.c.) was evaporated upon a weighed amount of lead oxide (approximately 3 grams), keeping the mixture thoroughly stirred. The dry mass was then made into a paste with water and extracted several times with choloroform. The chloroform, evaporated carefully to dryness, gives the caffeine in the caffeine tannate. The lead residue was then carefully dried at 120° C. and weighed to constant weight. The increase in weight gives the tannin extracted by the lead oxide. Another portion of the benzene-alcohol solution (25 c.c.) is evaporated to dryness to give the total caffeine tannate.

The Estimation of Total Tannin—We found that good and consistent results were obtained by taking 20 c.c. of the fresh infusion, adding slight excess of bicarbonate of soda and running in N/10 iodine solution until some petroleum ether shaken after each addition with the mixture showed a slight excess of iodine present by the well-known violet color. The factor for tannin was each c.c. of N/10 iodine used multiplied by 0·0021.

Estimation of the Total Caffeine—This was estimated by first slightly acidulating the infusion with dilute sulphuric acid, then boiling with an excess of lead oxide. After half an hour or so a clear pale yellow fluid resulted which filters perfectly, and can then be several times extracted with chloroform, which on evaporation yields caffeine.

CURRENT MEDICAL LITERATURE.

TO CHECK MIDDLE EAR SUPPURATION.

THE *Lancet-Clinic* points out, now that Yankauer's operation to check chronic suppuration in the middle ear by obliterating the lumen of the Eustachian tube, has been put to the test of trial by various surgeons for something over a year, are beginning to get data which will fix its place in operative therapeutics. It is, indeed, strange that the rôle played by the Eustachian tube in reinfecting the tympanum daily, almost hourly, and thus frustrating almost all of our efforts to cleanse and heal the cavity, should have been so slow in recognition; especially when its part in the primary infection of the ear was recognized years ago. Some years after the introduction of the mastoid operation, when earnest and determined efforts were being made to shorten the dreadfully discomforting period of after-treatment, the closure of the Eustachian tube, so as to prevent infection and reinfection of the operative area from the throat, became a step of prime importance in the operation. No one, however, seemed to think of applying this procedure to the non-operated infected ear until Yankauer did this logical thing, and devised a very clever and simple set of instruments for its accomplishment.

In Yankauer's original article he set forth the limitations which possible pathological processes would impose upon the success of his operation, but urged that it be undertaken in all doubtful cases, the patient being given the benefit of the doubt. A nervous patient could be readily persuaded to an intra-tympanic operation of short duration, which necessitated but little confinement, while it might be difficult or impossible to persuade him to accept the mastoid operation, which most aural patients are well enough acquainted with to dread. If the tube could be obliterated and pharyngeal reinfection prevented, and, notwithstanding this, suppuration should continue, a stronger argument in favor of the more formidable operation could be presented to the patient in the probable, if not certain, presence of dead bone. Before the date of Yankauer's paper the operation of closure was always done during the mastoid operation and while the patient was under a general anesthetic, with a small curette more or less (generally very much less) adapted to the topography of the part.

Yankauer's method contemplates local anesthesia only, and his mushroom-shaped curettes are perfectly adapted to the angle between the external canal and the direction of the tube. After anesthetization and as perfect sterilization as can be attained, the mucous membrane of the tube is cut through circularly at the isthmus of the cutting edge of the curette, and the tympanic extension of the mucous membrane is inverted into the tympanum by withdrawing the flat shoulder of the curette in such a manner as to bring the mucous membrane with it. If this procedure is successful no epithelial cells are left behind, and fibrous tissue fills the tube. If the mucous membrane is brought up to the middle ear in shreds, the curette must seek out all angles of the tube and destroy all mucous surfaces left behind.

Yankauer himself, whose experience is large, and whose technique can be expected to be perfect, reports a very high percentage of successes, some of them requiring a second tympano-tubal operation to complete the cure. A compilation of recent reports from all sources gives 40 per cent of all cases as cured and 60 per cent as improved. In other words,

four out of ten of these suppurative ear cases were, in all probability, saved from a mastoid operation, and, probably, a large proportion of the other six were also.

One can very heartily endorse what McCullagh, one of the most recent reporters, says: "In this method we possess a very valuable and simple operation that will eliminate the necessity for a radical operation in a certain percentage of cases, and which should always be performed before resorting to the major operation, unless some symptom demands a free exposure of the temporal region."

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INJURIES TO THE SKULL.

R. L. Payne, Jr., in the *International Journal of Surgery,* divides injuries of the skull into contusions and lacerations of the overlying soft parts and fractures of the cranium proper.

The treatment of these conditions *per se* involves only the common-sense principles of good surgery, but to the management of the complications is attached the most importance.

Contusions—Here the treatment can be only symptomatic and, unless we have a scalp wound, or intracranial symptoms are present, we can only conjecture the possible danger and await developments. But in the handling of contusions of the skull, remember that the complications are immediately hemorrhage and compression; intermediately, sepsis; and later, those of focal irritation and paralysis.

Fractures—Since the dangers of fracture of the skull depend entirely upon its relation to the underlying structures, it is not necessary for us to go into the kinds and varieties of fracture, but of considerable importance is the treatment from the standpoint of location.

The difference in the treatment of fractures of the vault and of the base lies in the fact that in nearly all fractures of the vault we can institute active and definite procedures at and around the immediate point of injury, whereas in basal fracture the treatment must be symptomatic and undertaken at a point distant from the immediate solution of continuity. Simpler linear fractures of the vault, without any apparent depression, should be left alone, unless there are present symptoms of compression. Compound fractures should be dealt with according to the amount of injury present and the deformation of bone. Our endeavor should be to thoroughly cleanse the wound, elevate all depressed fragments, repair any injury to the dura, and thus make the area as nearly normal as possible. Especially important is the repair of any wound of the dura, for we must remember that fractures *per se* do not cause trouble, but the seriousness lies in whether the dura is pressed upon or torn, and all the late symptoms of cranial injury are due to the damage done the dura and underlying structures.

If the fragments are wedged and can not be elevated, or if there is present an indented fracture, it then becomes necessary to trephine at the margin of the injured area to permit of elevation. When there is extensive comminution and many loose fragments, we are confronted with the advisability of removing these, and the old custom has been to take out all detached pieces. More recent experience has taught us that even boiled fragments when replaced do heal, and it is always wise to preserve *in situ* all fragments, hoping that the bone-forming cells of the dura, periosteum or diplöe may preserve their viability. Where there is no injury to the overlying scalp, we should not make the fracture compound by operation unless there are symptoms of cerebral compression; but if a distinct depression of bone is present, the indication for surgical intervention is absolute, and we should not wait for signs of local irritation or compression. Unelevated fragments of bone will almost surely give trouble in the future and should invariably be cor-

rected or the area completely removed. It is important here to discuss injuries to the various sinuses which so often complicate fractures of the skull. Hemorrhage from this source necessarily is very profuse and often fatal, and active steps must be taken. Forcible tamponade is rarely sufficient and, if possible, both edges of the torn sinus should be grasped with a broad Péan clamp and the opening closed with fine linen on a curved needle; often this is impossible, in which case the clamp should be left in place for five or six days. Sometimes complete double ligature is necessary, and in this instance catgut should be used because linen and silk are too liable to cut through; but it is important to remember that complete occlusion of a large sinus is attended with serious after-effects, and in the cavernous sinus is invariably fatal.

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"RHEUMATISM."

The *International Journal of Surgery* pertinently remarks that no term in medicine is more loosely, not to say more recklessly, applied than "rheumatism." As still used, it covers a multitude of erroneous diagnoses. To some medical minds every painful or swollen joint represents a manifestation of rheumatism—this in spite of the fact that the etiology may be entirely different. Many of these conditions are no doubt of bacterial origin, especially the more acute forms, while in the chronic types disorders of metabolism, trophic disturbances, or autointoxications seem to play a prominent part.

There is every reason to believe that acute articular rheumatism is of microbic character, probably a streptococcic infection, and it would be well if the term "rheumatism" were restricted to this disease alone. Other forms of acute inflammations of the joints can be advantageously designated as arthritis, qualified according to the causative agent, whether it be the tubercle bacillus, the gonococcus, the bacillus typhosus, the influenza bacillus, the spirocheta, etc. Such a classification is not only very desirable from a diagnostic but also from a therapeutic standpoint. To speak of a case as "gonorrheal rheumatism" is apt to divert attention from the cause and lead to undue attention being given to the affected joint and little, if any, to the focus of infection in the urethra, prostate, and seminal vesicles. Under this mistaken notion these patients are often deluged with antirheumatics, which, though they may relieve pain, exert but slight influence upon the pathological process.

Even greater errors are committed in classifying chronic affections of the joints as rheumatic. Some physicians evidently are not yet sufficiently impressed with the fact that acute articular rheumatism is rarely, if ever, followed by chronic manifestations, and that the existence of chronic rheumatism *per se* is strongly doubted or even denied by many authorities. Such names as rheumatoid or gouty arthritis are equally misleading, to say the least; for though they may be consoling to the patient, they tend to foster slipshod therapeutics based upon their supposed origin. In fact, progress in the treatment of these cases is greatly hampered by cut-and-dried diagnoses of this kind. Thus, for instance, to treat patients suffering with osteo-arthritis or arthritis deformans as rheumatics is to ignore the fact that many of them require tonic and reconstructive medication and the use of remedies that will arrest auto-intoxication, intestinal or otherwise, in addition to appropriate local measures (massage, electricity, hydrotherapy, dry hot-air, etc.). It is not too much to say that the persistent use of the salicylates in large doses in these cases may act unfavorably through their depressing effect.

Hence it will be seen that, looked at from whatever point we may, there is abundant room for reform in our ter-

minology of the conditions still so commonly grouped under the general name of "rheumatism."

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TREATMENT OF PLEURISY.

Prof. Robin thus outlines the treatment of this disease:

The patient being put on exclusive milk diet, a laxative and diuretic dose of calomel is given: Calomel, 8 grains, divided into four packets, one every hour.

The following day ten grains of salicylate of soda are given every six hours. Jaborandi has been employed in infusion (1 dr.), taken during the day to excite salivation and sudation, but it is a dangerous remedy, and should never be employed, at least in pleurisy of the left side.

The blister has been impugned by many as being dangerous, oppressing the nervous system, provoking congestion of the kidneys, irritating the bladder, provoking fever and exposing to infection, sometimes mortal. To these objections Prof. Robin replies that the blister increases phagocytosis, and increases pulmonary ventilation in the proportion of 50 per cent. The patient consumes 25 per cent. more of oxygen. It has not only a revulsive effect, but a dynamic action on the respiratory changes.

Therefore, towards the sixth or seventh day, when the temperature begins to go down and the effusion remains stationary, a large blister should be applied. The blister diminishes the dyspnea, and far from raising the temperature, it lowers it after a slight transitory elevation.

The blister should be powdered with camphor, and the skin well washed with soap, and afterwards with alcohol and ether at the point of application. It should never be placed right on the back on account of irritation and the difficulties of dressing; it is applied to the side and left ten hours *in situ.*

If, after that time, the skin is only reddened, a poultice of starch is applied to produce the desired "blister"; boric acid ointment completes the after-dressing.

Blisters should not be prescribed in persons suffering from Bright's disease or hypertrophy of the prostate.

Besides the above fundamental treatment, certain symptoms require attention. The pain in the side may need an injection of morphine; great dyspnea, an injection of one-tenth of a grain of chlorohydrate of heroin. In case of a persistent hyperthermia, M. Robin recommends the association of pyramidon (6 gr.) and hydrochlorate of quinine (8 to 12 gr.), the quinine to be given ten minutes after the pyramidon.

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PRESCRIBING WALKING FOR EXERCISE.

American Medicine, commenting editorially upon this subject, admonishes that at the beginning only short walks should be taken, those of the first day or so not exceeding half a mile. An excellent plan is for the patient to get a pedometer and regulate his walks by this. This little pocket instrument may not be absolutely accurate, but it is sufficiently so to give a person a very good idea of the distances covered, and this adds a new interest and zest to walking. Each day the walk should be in a different direction and the distance gradually increased as the patient develops his gait and loses the sense of effort or fatigue. Almost before one realizes it, he can walk ten to fifteen miles without the slightest fatigue. From now on the benefits become manifest and the daily walk often proves so refreshing and invigorating that a patient is much upset if he has to forego it, and actually misses the beneficial effects. Proper clothing is essential if the utmost good is to be obtained from walking. This should be adjusted to the season and never be burdensome. Especial attention must also

be given to the stockings and shoes. The stockings should be of light weight and fit properly. The shoes should have fairly heavy soles with light soft uppers that lace snugly but not too tightly around the ankles. Great care should be taken to secure shoes that properly fit the feet. Of all abominations a tight, ill-fitting shoe is the worst. Too large shoes are perhaps not so disagreeable and painful, but they are no less apt to cause serious trouble. Low or Oxford shoes are not as desirable for walking, as they fail to provide the ankle support needed. It goes without saying that no one should ever attempt to walk any distance in new shoes. Within the last few years heels of rubber have become available, and the experience of many different people under widely varying conditions has demonstrated, apparently beyond all question, the practical value of this material for preventing the hard, solid impact that is inseparable from the use of leather heels. Rubber heels not only afford a cushion-like effect that materially reduces bodily jar, but they prevent slipping and sliding. Since the major part of the sidewalks that urban dwellers are obliged to walk on are hard and unyielding, the advantages of heels of an elastic, resilient material like rubber would seem to require no argument. The fact that they have come into almost universal use shows that wearing them is not a mere fad, but is due to a common-sense appreciation of their real benefits.

The greatest care must be taken to keep the feet from getting tender and sore. In a long walk, it is not the heart or lungs that first give out, or cause annoyance, it is the feet. There is hardly anything that can occasion such intense suffering or depress the spirit and ambition like sore feet. Army officers have long realized the importance of keeping the feet of "the rank and file" in good condition; and the slightest deformity or abnormality of the feet almost always leads to the rejection of the applicant who is seeking to enlist. So much attention has been devoted to the subject in army circles that it has become a common saying that "a soldier is only as good as his feet."

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MEDICAL TREATMENT OF GOITER.

O. A. Palmer, in the *Eclectic Medical Journal,* notes that the several varieties of this disease are described according to their anatomical peculiarities and different pathological features. A hyperplasia of the normal tissue is termed the parenchymatous form. The follicular variety is characterized by the enlargement of the follicles of the gland. The fibrous goiter is due to the increase of the connective tissue which compresses the follicles. The uneven distribution of the fibrous tissue gives rise to the irregular and nodulated appearance of the gland. The cystic variety is known by the follicles being distended with a liquid content; the follicles may be filled with colloid or calcareous matter. Inflammatory conditions or suppurative processes may alter the character of any of the various forms. By taking the history of the case, and examining the various physical conditions, one can generally recognize what remedy is indicated.

As the majority of these cases are found among women, special care should be used to determine the existing cause. The diagnosis is not difficult. Malignant adenomata must always be differentiated. The swelling may be scarcely perceptible, or so large that it will need mechanical support. The enlargement may be confined to one or both lobes, as well as the isthmus. The development may be gradual, and is generally aggravated by nervous irritation.

Whenever a case of goiter presents itself to me for treatment, says the author, I think of the condition of the digestive organs, then the sexual and

nervous system. In the majority of cases I find that the digestive organs are unable to do their work properly, and the sexual or nervous system needing repair.

Auto-intoxication disturbs the circulation through all the glandular structures, especially the thyroid gland. My first thought, then, is to obtain an aseptic condition of the digestive tract as soon as possible, with antiseptic laxatives and other indicated remedies. In some cases, the goiter will disappear by the time I have accomplished this, and the sexual and nervous systems will be much improved. If the sexual or nervous system is much involved, they should receive attention according to the indications. Calc. phos., calc. flour, two doses of each daily, in many cases, is all that may be needed. If there is continued fermentation of the stomach and bowels, with a yellow-coated tongue, nat. phos. should be taken two or three times daily. I have cured cases with this remedy alone. In many cases, this remedy will relieve the pressure symptoms in advanced cases. Kali mur. is a great remedy in glandular swelling when the gland is soft. There is more or less stomach disorder in these cases, and the tongue is coated white. I have often used an ointment of the third trit., one drachm to the ounce of vaseline, which was rubbed on the neck morning and night. A strong cerate of phytolacca can be used twice daily on the goiterous swelling. Galvanism and electrolysis have been used with some success. In exophthalmic goiters, lycopus virg. is the remedy for most cases, the dose of the spec. lycopus virg. being five to fifteen drops three or four times a day. A good tincture of fucus vesiculosus has cured cases, the dose being thirty to forty drops before each meal. All small goiters of recent formation can be cured by the use of protiodide of mercury. Give a small powder of the second trit. three or four times a day. Hydrobromide of quinine, five-grain doses three or or four times daily, has given good results in exophthalmic goiter cases. Calcidin, one third to one grain, four times a day, with a good elimination, is a good general remedy. Locally, I use the following lotion: spec. tinc. of thuja, spec. tinc. phytolacca, equal parts; one-half ounce rosewater; glycerin and alcohol, equal parts, one ounce. Mix, and rub gently on the glandular enlargement on going to bed and getting up.

GENERAL PRINCIPLES IN HEART DISEASE.

Whinery and Gordon, in the Journal of the Michigan State Medical Society, admonishes that in all heart cases there are some general principles to be borne in mind.

First. We should make careful, complete and repeated physical examinations. Modest women and busy men often do not wish to have their chest and abdomen completely bared for a proper examination. Nevertheless, a thorough examination will be more apt to enable the physician to understand the nature and extent of the lesion, the treatment best fitted for it, and the progress of the case if treatment has already been started. It will also give the patient a greater degree of confidence in the physician.

Second. We should have the courage of our convictions and be prepared to insist firmly upon what we consider proper management, even if it entails a change of occupation and habits, or a prolonged rest.

Third. We owe it to our patients to become as familiar as possible with the whole subject of cardiac pathology, to study the methods of others, profit by their results and avoid their errors.

Fourth. We should make all our directions to patients plain and definite.

There is a peculiar relationship between pathology and symptoms in heart

affections. So many other factors besides the mechanical action of the heart are concerned in maintaining the circulation, and the branches of the circulatory system are so widely distributed, that the symptoms of cardiac insufficiency often seem far remote from the heart itself. In no other organ except, possibly, the brain are central lesions productive of so wide and varied symptoms in other parts of the body. The fact that heart lesions are very seldom simple, but are complications of, or are complicated by, lesions in other organs, makes the management of these cases very difficult and complex. In fact, many of our cases of endocarditis are not recognized at all until, perhaps, years afterwards, the resulting damage to the valves attracts attention during a routine physical examination or an acute cardiac insufficiency.

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OPERATION FOR CATARACT.

W. W. Brown, in the *Canada Lancet*, asserts that the operation for cataract requires more nerve, skill, judgment, delicate manipulation, painstaking care, before and after the operation, than any other done on the human body. A cut of ¼-inch too little or too much here spells disaster or failure. The chief aim of the operator is good vision—cosmetic results be what they may. There are a few conditions that contraindicate operation—dachryocystitis, owing to danger of infection, cough, tends to reopen the wound after section. Ozena is another contraindication.

Operation—Clip off eyebrows and eyelashes, sterile towels to head and chest, and good light.

Wash with soap and water.

Wash with sulphuric ether.

Wash with bichloride 1 in 4000.

Evert lids and wash thoroughly with hot bichloride 1-4000.

Put in 1 drop of 1 per cent. eserine half hour before operation.

Repeat 15 minutes later.

Three drops 4 per cent. cocaine at 2-minute intervals before operation—begin 10 minutes before section.

Boil instruments, put them into alcohol—then into 1 per cent. carbolic solution. Use lint wrung out of 1-4000 bichloride.

Withdraw knife slowly. Nothing should be rushed—take plenty of time. A good sharp knife and good speculum are very necessary. Half the battle is in making a good section—if this is properly done everything else is easy. Be at ease, in a sitting position, patient's head not more than 12 inches below the operator's eyes, with perfect control over your hand. This can not be done in bed or on a high table—a table 26 inches in height best meets these requirements for most operators.

Enter the knife slightly above the mid-horizontal line of the cornea, and make the counter-puncture *corresponding* point on the inner side, *i. e.*, section about half the circumference of the cornea. Make the section with the finger and not with a hand movement—*cut* very slowly. Sawing movements cause pain and imperfect coaptation of the lips of the wound. Following the operation, if the patient is not complaining, rest assured he is doing all right. A watchful attendant should, in every case, be on hand day and night for the first ten days to prevent the patient from getting out of bed, especially out in the sunlight.

Cocaine should not be used too freely; if the canaliculus is very patent the cocaine may get down the duct, affect the throat, cause retching and reopening of the wound with possible suppuration and failure. Never treat a cataract at long range. After removal do not leave the care of the eye to an inexperienced man, as it often ends in disaster.

THE DOCTOR HIMSELF.

SPECIALISM IN PRACTICE DEFENDED.

By J. A. Burnett, M. D., Marble City, Okla.

SPECIALTY practice is legitimate, and should be encouraged. There should be a closer relation between the specialist and the general practitioner. The time has come when no one person can retain all that is known in medicine. Not many can retain all of Gray's Anatomy, according to State Board reports. Medical literature is extensive. It would be a job and require much time to even read one complete, up-to-date textbook on each of one of the various subjects in medicine, much less to take time to master all the details.

We have works on practice of medicine in twenty volumes, which, possibly, the so-called editors have never seen one-fourth of the material, and not one physician in a million ever read such a work through. We have works on surgery and other branches that contain various octavo volumes.

How long would it take for a physician to read one book on each of the following subjects? (1) anatomy, (2) physiology, (3) chemistry, (4) materia medica and therapeutics, (5) practice of medicine, (6) surgery, (7) obstetrics, (8) gynecology, (9) pathology, (10) bacteriology, (11) histology, (12) dermatology, (13) ophthalmology, (14) refraction, (15) otology, (16) diagnosis, medical, (17) diagnosis, surgical, (18) diagnosis, gynecological, (19) pediatrics, (20) mental diseases, (21) nervous diseases, (22) genito-urinary and venereal diseases, (23) fractures and dislocations, (24) orthopedic surgery, (25) rhinology, (26) laryngology, (27) hygiene, (28) medical jurisprudence, (29) toxicology, (30) dietetics, (31) electro-therapeutics, (32) vibratory therapeutics, (33) thermo-therapeutics, (34) hydro-therapeutics, (35) vaccine therapy, (36) serum therapy, (37) hypnotism, (38) "606," (39) history of medicine, (40) U. S. P., (41) tuberculosis, (42) diseases of the heart, (43) urology, (44) operative surgery, (45) andrology, (46) diseases of the spinal cord, (47) rectal diseases, (48) nursing, (49) photo-therapy, and (50) embryology.

These fifty subjects do not cover the ground. One book to each of these fifty subjects, of an average of 1,000 pages each, would be 50,000 pages. If a physician should read and digest 50 pages each day, it would take him nearly three years to get through, and what he learned when he started would be out of date when he got through with the last.

This reading and digesting of fifty pages each day would not give much time to actual practice and reading the *Journal of the American Medical Association*, which is published weekly, and contains about seventy-four closely printed pages, not to mention other journals of medicine, besides current literature and general news.

I have not mentioned all subjects by any means; besides, 1,000 pages will not begin to be an average. We have a work on syphilis in six volumes, costing $81.00. That is one disease alone. We have a work on embryology in two volumes, costing $15.00. We have a work on the appendix costing $10.00. We have a work on pediatrics in four volumes costing $20.00. We have a work on diseases of the eye in four volumes costing $20.00.

I could go on, but this is sufficient to any intelligent person that no one human being could even read one of our most complete textbooks on all subjects of medical science in five years, even if he had nothing else to do, much less digest them. Besides, not many would be financially able to purchase one of the

known of this busy, bustling doctor who gets burned out with no insurance on his property? One can do only about so much work or he will neglect something of great importance.

The doctor who has a ripping big practice the first few years may get a lot of valuable experience, but the natural tendency is for him to become hasty and careless in his diagnosis and in prescribing. After all one does not get the actual value from a dozen cases casually and indifferently treated that he may derive from one case earnestly and painstakingly handled. The man who is trying to hold up too big a business must necessarily hustle, and in doing so leaves undone many things that he should do and is more likely to make mistakes than the one who is going slower. The writer knew one busy doctor who, in his haste to cure some fissured nipples, applied nitrate of silver and burnt them out, root and branch. Of course, we who travel at a slower pace may also blunder occasionally.

The majority of physicians who have a big business become a trifle conceited, and if they don't blow about it themselves a few of their friends—old women of both sexes—will work overtime bragging up their doctor. General laudatory mention of a doctor helps him wonderfully for a time, but after a while there is almost invariably a reaction. All the other doctors roundabout get a trifle jealous and very much disgusted with the horn-tooting methods of the man who has no more ability than they themselves possess. A doctor can not long prosper in a community if he has not the respect of a majority of his medical brethren, for the majority are usually right and always exert a great influence. The doctor who has a hundred cases of sore throat every month, fifty cases of grip, twenty-five fractures, fifteen obstetrical cases, and so on, ought to keep it to himself. People will soon take pity on the poor overworked man and quit troubling him so much.

It has been my aim to cheer and comfort the struggling physicians who think they have not enough business. Perhaps many have not; nearly all doctors think they are not prosperous enough, and the sad thing about it is that it's too often true. Did you know the majority of doctors of all classes are not satisfied with their location and are always wishing they were somewhere else? Accept a word of advice from the self-appointed prophet and seer: If you are making a decent living don't pine for the bigger things, for they carry with them troubles that you may wot not of. In the end success comes from within. Improve yourself and enjoy life as you go along. Add a little to your store of medical and general knowledge every day, and if possible perfect yourself along some one line of research or practice. In ten years you will find yourself a better physician and one who is able to "deliver the goods." Your qualifications will attract a desirable and well-paying class of patrons. More than that you will have conserved your energies and not have grown prematurely old and thus lost your capacity for enjoying the good things of life. If one really qualifies himself to do things the world will build a road to his door.

DECADENCE OF CHINESE DOCTORS.

George A. Dorsey, in the *Chicago Tribune*, writes entertainingly of medical affairs in China. Says he: The finest shops in China are drug stores. You know them by their colossal signboards lavishly painted with gilt characters, their iron mortars, and models of various styles of knives employed in cutting drugs.

The Chinese pharmacopœia comprises almost everything in the plant, mineral, and animal world. The Chinese still supply us with musk, rhubarb, cardamom, ginger and cassia bark, though ginseng

is no longer in vogue in our pharmacopœia.

Since earliest days Chinese have paid much attention to the theory and practice of medicine and their literature on the subject is vast. Chinese medicine today is about like that practiced in Europe from the sixteenth to the eighteenth century. But for ages they were at the head of the world of medicine.

Long ago they attained surprising results in treating diphtheria and dysentery. They gave to Europe acupuncture and inoculation. Small-pox has engaged the attention of Chinese physicians since the beginning of the Christian era and inoculation has been practiced for more than a thousand years. The method was to insert in the nose cotton which had been dipped in the virus.

In 796 the Chinese began to vaccinate. There were three vaccination stations in Pekin in 1864. As early as the sixth century stone needles were used to puncture swellings and the idea was not introduced into Europe until four centuries later. Cauterization was practiced by burning the rolled leaves of a small plant. It was held to be good for rheumatism and nosebleed. Anesthetic effects were produced by certain mushrooms and the root of aconite. Cases of skin grafting are early recorded.

In China, as in Europe, religious beliefs hindered the study of anatomy. But in 1027 two brass anatomical figures of the human form were made. The surface was marked off into 367 spaces, each having its own special name and being assigned some relationship to the internal organs.

In early times surgery was extensively practiced, but it fell into disrepute owing to a belief, which became widespread, that as a man left this world so he would appear in the next. In European hospitals at treaty ports a patient sometimes prefers death to the loss of an arm or leg, even though assured of a strong probability of recovery in case of an operation. Anesthetics were used in operations in 220 A. D.

The basis of Chinese medical practice is the pulse. The wrist pulse is divided into three kinds, each indicating a different organ of the body, according as the pressure is light or heavy.

System of Massage.

Medical gymnastics were reduced to a scientific system by Taoist monks. The main point of the Chinese system of massage is the three principal attitudes, sitting and lying, and three modes of breathing, through the mouth, nose, and inspiration and expiration alternately through both organs. Iron balls are rolled swiftly to and fro in the hands to strengthen the muscles. To massage the stomach a wooden instrument consisting of three movable wheels is applied. Every barber is a masseur and there are professional masseurs who are not barbers. The physician's medicine kit contains some curious "like heals like," good old-fashioned empiric medicines, the outgrowth of primitive sympathetic magic.

Chinese medicine developed a special fondness for fossilized "dragon bones," derived from extinct herbivora. They are also fond of "dragon teeth," as fossilized shells are called. In Shantung glue is made from asses' skins. In a certain town of that province is a well, the water of which, when drunk by asses, makes their skins especially good for making glue. This glue brings a fancy price, as it is a famous tonic throughout China, especially good in all female complaints.

False Teeth 50 Cents a Set.

Dentistry is not new in China. Ages ago their dentists discovered that toothache is due to bugs. The dentists proved it by inserting in the mouth a spatula with a worm attached under thin paper. The paper moistens, the worm drops and is picked up by the dentist and exhibited to the patient, of course. This enhances

his reputation and increases his fee. But there hasn't been a day for a thousand years when you couldn't buy a set of false teeth in China for 50 cents; price of one false tooth 5 cents. They use corrosive sublimate to deaden pain, then pull the tooth with the fingers or a pair of pliers. False teeth are attached by means of a wire.

Because of their fondness for animals the veterinary surgeon forms a class by himself. He treats horses, mules, donkeys, camels, cattle, dogs, cats, birds, and goldfish. He has four principal prescriptions, each consisting of about a dozen different drugs, and each efficacious according to the season of the year. Abscesses are punctured with steel needles, of which they have various forms. Dried lizards are good for horses suffering from pulmonary troubles. In giving medicine to a horse a special bit is used, by means of which the animal is tied up and the concoction is poured into the mouth with an ox-horn fashioned into a ladle.

Physicians may practice without being subjected to an examination, but the criminal law and public opinion hold the doctor strictly to account for his doings.

Story of a Chinese Doctor.

I have referred more than once to Giles' translation of that famous classic, "Strange Stories from a Chinese Studio," as familiar to the Chinese as are the Arabian Nights to the English-speaking world. They were written in 1679. In the tale of a doctor we have a fine satire on a certain breed of doctors the world over, those recruited from the swarms of the half educated.

"A certain poor man named Chang, who lived at I, fell in one day with a Taoist priest. The latter was highly skilled in the science of physiognomy, and after looking at Chang's features said to him: "You would make your fortune as a doctor." "Alas!" replied Chang, "I can hardly read and write; how then could I follow such a calling as that?" "And where, you simple fellow," asked the priest, "is the necessity for a doctor to be a scholar? You just try, that's all." Thereupon Chang returned home, and being poor he simply collected a few of the commonest prescriptions and set up a small stall with a handful of fishes' teeth and some dry honeycomb from a wasp's nest, hoping thus to earn, by his tongue, enough to keep body and soul together, to which, however, no one paid any particular attention.

Now it chanced that just then the governor of Ch'ing-chou was suffering from a bad cough and had given orders to his subordinates to send to him the most skillful doctors in their respective districts, and the magistrate of I, which was an out-of-the-way mountainous district, being unable to lay his hand on any one whom he could send in, gave orders to the beadle to do the best he could under the circumstances.

Fond of Animals.

The Chinese are extremely fond of animals. As a rule they take good care of their dogs and cats, preparing kennels for them provided with straw. There is an extensive trade in singing birds, which are the special pets of men rather than women. A man will take his pet with him into the country, where he will gaze admiringly at its plumage and listen to its song for hours.

Charitable societies are numberless and count millions of members, representing all classes of society, who take an active part in the work, contributing much money. Some of these societies take ways as peculiar as some of those in the west. A society in Pekin has the Buddha temple dusted once a month, though I have never been able to discover which particular temple it is—they are all equally dusty. Another provides paper lanterns at night, to prevent the accidental killing of dogs and other animals.

REFRACTION.

STRABISMUS IN CHILDREN.

ISAAC M. HELLER, in the *Medical Record,* cites and elaborates the three prevailing theories of strabismus in infants and young children as follows:

1. The short-muscle theory: It seems most obvious to regard an internal strabismus as due to a short internus muscle or a divergent squint to an overacting externus. The equally obvious remedy then would be to cut that offending muscle. This theory is easily disproved by showing that each eye moves freely in all directions; that the squint may affect either eye alternately, and in the beginning is not infrequently occasional, and that during sleep or anesthesia, or after the instillation of atropine, the eyes are frequently perfectly straight. It was formerly common practice to tenotomize these cases, with many disappointing functional results.

2. Refraction theory: Donders was the first to call attention to the fact that convergent strabismus was usually accompanied by hyperopia alone or in combination with astigmatism. Worth found this true in 1,729 out of 2,337 cases, or over 74 per cent. The idea was as follows: A normal eye looking at an object twenty or more feet away uses none of its accommodation, and the eyes are parallel. On looking at an object thirteen inches off, the average reading distance, he exerts three diopters of accommodation. Inasmuch as accommodation and convergence are inseparable, he must at the same time exert his interni to the equivalent of three diopters or three meter angles in order to bring his lines of vision together at the required point. A hyperope of say three diopters must use his accommodation just that much to see things at twenty feet and his eyes tend to converge even for distance. Now, when such a person wants to read ordinary print he also must accommodate three diopters, which, added to his three diopter handicap, means six diopters that he is now using. As stated, accommodation without convergence is impossible, hence his eyes turn to a point six meter angles, or six and two-thirds inches off. The eyes pointing thus receive a very imperfect image of an object thirteen inches away, since the rays do not fall on the fovea directly. To correct this, the patient unconsciously rotates one eye (the better one) outward until the macula is reached. As you well know, the outward rotation of each eye is inseparably associated with the inward motion of the other. The result is an excess inward rotation of the squinting eye. The rays now fall on the fovea in the fixing eye and on the nasal side thereof in the squinting eye. Impressions recorded here are never clear and the child soon learns to ignore them completely. Where the vision of each eye is equal the strabismus alternates until one eye becomes fixed definitely. This theory held for a long time, although it failed to satisfy those cases where there was no refractive error and where internal strabismus was associated with myopia. Moreover, it did not explain that large number of hyperopes who show no tendency to squint whatever. For a time it was believed that an eye turned in or out because its congenital vision was so inferior to that of its fellow and its image so blurred that the eye deviated from the true line of vision the more easily to disregard his diplopia. This poor vision or amblyopia is now considered an effort rather than a cause of squint. That is a sort of atrophy of the rods and cones following disuse, just as a limb atrophies in a cast after a fracture. Worth believes that a true con-

genital amblyopia is extremely rare and that most cases so regarded are really due to undiscovered or neglected squint. In the thousands of cases that have come under his notice there are but twenty-three which he counts as truly congenital. In general it may be said that the earlier in a child's life a squint develops the greater is the chance of that eye becoming amblyopic.

3. The fusion theory: Claude Worth, of London, in 1903 wrote an excellent monograph on the etiology and pathology of squint, calling attention to a new factor. His list includes 2,337 cases of all varieties of strabismus, covering a period of ten years, of which 90 per cent developed before the age of six. He shows that none of the preëxisting theories accounts for all cases, so he looks about for one which does. Few of us with normal vision realize that we really see everything twice—that one distinct picture is projected on the retina of each eye. This you can readily prove to your own satisfaction by pressing gently on one eyeball, and on looking at a light you will clearly see two. Each spot on the retina of one eye has its relative area on the retina of the other with the exception of the extreme nasal sides. All rays falling on these correlative points are perceived as one by the sense of fusion situated in the visual center of the brain. This fusion is very important, since it gives us our sense of proportion and perspective, without which all things would seem flat. Worth claims this fusion faculty is absent at birth, and bases his conclusions on the following observations: He placed children a few hours old in a dark room and threw the image of a candle by means of a concave mirror into their eyes. The infants would fix the light for an instant and then turn away. This is probably a purely reflex act. At the end of two to three weeks the infants would fix the light steadily for several seconds at a time with one eye, but would not converge both visual axes. At five to six weeks, as a rule, the positions of the reflections were symmetrical on the cornea, showing a binocular fixation, but now and then one eye would deviate a little inward, or more rarely outward, while the other fixed the light. During these first few months of life the eye movements are uncertain, not completely controlled by the higher brain centers. At five to six months, however, the child's attention can be engaged by almost any bright object, while one may slip a 12-degree prism, base out, before one eye, which will rotate in, showing there is an effort made to maintain binocular vision. In other words, the vision of each eye is present at birth at the macular region. The convergence which tends to subserve binocular vision develops during the first few months, so that it is evident by the seventh month and goes on to perfection up to the age of six years. During this period, should anything occur to interfere with this development, it is a question whether an effort be made to overcome it or whether the newly acquired art shall be abandoned and the vision of that eye suppressed. After the sixth year the fusion sense is fully developed and nothing can occur to destroy it save a true paralysis of one or more muscles. The commonest provocations contributing to the overflow of binocular fusion are the following: 1. Hyperopia, which has already been considered. 2. Anisometropia; that is, where there is a marked difference in the refraction of the two eyes, such as one eye being normal and the other ten diopters myopic. 3. Hyperphoria, which is an imbalance of those muscles which raise and lower the eyes. 4. Esophoria and exophoria, an imbalance of the lateral eye muscles. 5. Specific fevers. These children usually have considerable hyperopia and in their enfeebled condition find accommodation, coupled with a poorly developed fusion sense, quite an effort. This upsets their unstable equilibrium.

and the squint becomes apparent. 6. Violent mental disturbance such as convulsions, severe fright, etc., may, in the absence of the fusion faculty, upset the equilibrium of the convergence center. One influential factor must not be overlooked—that of heredity. In a fair number of my cases there was a distinct history of strabismus in one or more members of the immediate family, and Worth found it so in 52 per cent where his information was reliable.

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ACUTENESS OF VISION AND ILLUMINATION.

The Illuminating Engineer reports a series of tests on the effect of illumination on visual acuity, published by Broca and Laporte. The usual effect of a bright light in the field of view is to decrease the effective illumination and so to render it difficult to see detail. Yet, Dr. Broca has found, such a light may occasionally have the opposite effect, especially if the illumination on the detail viewed is very high, so that the loss in brightness caused by pupillary contraction is not of very serious consequence, for this contraction is equivalent to stopping down the lens. It may therefore enable fine detail to appear more distinct to a shortsighted eye, just as a stopped camera lens, while reducing the brightness, makes the image sharper. However, Dr. Broca goes on to point out that though an improvement in visual acuity may conceivably be attained by this means, the effect is apt to be very fatiguing to the eye, and the practice is not to be encouraged.

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CONICAL CORNEA SHOULD BE TREATED EARLY.

At a recent meeting of the British Ophthalmological Society, Charles Wray discussed conical cornea. He put stress on the need of an early diagnosis of this condition, as the bulging forward meant thinning and softening of the cornea. If possible, the astigmatism due to this condition should be corrected, as such a correction tended to prevent an increase in the irregular curvature. He stated that most of the patients were females from 18 to 25 years of age. A distinct cone shadow is generally seen with retinoscopy, but the astigmatism is seldom stationary. Accurate correction, alone, prevents the lid squeezing which accelerates the formation of the cone even when softening and thinning are not present. The leading points in treatment are accurate glasses, no work at reading distance, good hours, air, exercise, and so on; no night work, and a suitable occupation. As to treatment, the apex of the cone could be burnt with a rather highly heated cautery, getting near Descemet's membrane. Landolt found optical correction rarely applicable. The application of the galvano-cautery point to the highest part of the cone, not going deeply, but repeating as often as necessary, was, Wray thought, the best form of operative treatment.

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ABILITY TO DISCRIMINATE BETWEEN COLORS.

The ability to discriminate between colors, says the *Medical Times*, is a safe test of intelligence, in the opinion of Dr. Warburg, a Cologne physician. In his experiments colored yarns of various tints and shades were pinned upon cards and placed before the school children, who were asked to designate each color by name. In all, 1800 children of various ages were subjected to the test. Dr. Warburg's opinion is that the result furnishes conclusive evidence that color perception is acute or dull in proportion to the degree of the pupil's mental development. The percentage of correct answers rose from class to class and was invariably highest among the most intelligent children. It was found not only that the eye is more sensitive to certain colors than to others, but also that the relative degree in which different colors impress the mind is definitely ascertain-

able. Thus, Dr. Warburg has been able to draw up a color scale, grading hues according to the strength of the impression they make. White and black are the easiest colors to recognize; red, yellow, green and blue follow in the order named, though blue is much harder to perceive than green. Of another class, and far more difficult to recognize, are brown, gray and violet. The perceptive power of girls is much more acute than that of boys. The result of the tests confirms the testimony of statistics, which show that two-thirds of all cases of color-blindness are among men.

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REFRACTION WITHOUT DRUGS.

A. P. Davis, in the *Optical Journal and Review,* propounds the question, Can refraction be satisfactorily done without the use of drugs? If it can be, then drugs are not needed. If ever needed, when, and under what conditions? If refraction can be done without drugs satisfactorily, why consider their use at all?—and it surely can be when nerve function is understood.

What is refraction? It is correcting the vision so as to bring it (vision) as nearly to a normal condition as possible, without there being any abnormal straining of the eyes to see as nearly normal as possible.

There are conditions to be considered which involve, first, the retina itself; second, the intrinsic muscles of the eye; and, third, the extrinsic muscles of the eye. It must be remembered that an emmetropic condition of the eyes is a normal condition—a standard condition—where it requires no abnormal effort to see.

There are found many conditions to consider when one is called upon to refract an eye. First, the age of the patient; second, the condition of the eye —whether hyperopic, myopic, presbyopic, astigmatic or asthenopic.

The hyperopic condition is to be corrected by plus lenses, the myopic by minus lenses, and the astigmatic by cylinders, and the presbyopic by plus lenses generally. The astigmatic condition can be corrected by taking off the ***strain from the extrinsic muscles only***—(that is, the strain from the nerves ending in the muscles). Where asthenopia really exists, there is no better means to institute than to co-ordinate the muscles by prismatic exercise until the inco-ordination is corrected; and each eye should be trained until 60° F. are overcome, and this assured by repeated trial, so that the eyes can fix the vision instantly on the object looked at, without hesitancy and without any strain perceptible to the patient.

Refraction, for hyperopia, myopia or astigmatism, is usually unsatisfactory when any asthenopia exists, so that it is best to correct the asthenopia before refraction is attempted. Some argue that this can be done with strong plus lenses "fogging" both eyes back to a real myopic state, but that is seemingly unnatural and tedious, to say the least of it. The graded prismatic lenses are really the best means to correct the asthenopia known, and the most satisfactory to the patient.

If all of the manifest hyperopia can be ascertained without drugs, why use drugs? Many an eye has been ruined by the use of mydriatics, whereas no injury can ever follow the refraction without drugs—if anything like intelligence is used by the refractionist. The latent hyperopia can be brought out as time passes and the vision improves, simply by adding stronger lenses as conditions demand, until all the latent hyperopia is corrected, and then the proper strength of lenses prescribed.

THE SICK ROOM.

MEDICAL NURSING.*

By Leon Louria, M. D., Brooklyn, N. Y.,
Attending Physician to the Jewish Hospital.

THE trained nurse is of indispensable service in attending the sick; she is of great assistance to the physician. He expects of her a close and thorough observation of her charge and an intelligent interpretation of the symptoms and their changes which develop during the intervals between his visits. The more detailed the observation, the more complete the record, the more value it represents to the doctor.

I shall endeavor in the course of my lectures to acquaint you with the characters and symptomatology of the most common diseases which you will have the opportunity to nurse in your practice. I will try to give you an idea of the etiology of the diseases and their pathology, changes which occur in the body, so that you will better understand the different hygienic and therapeutic measures which are applied for the purpose of bringing the patient back to health.

The patients entrusted to your charge are, as a rule, bed-ridden, and the selection of proper quarters is frequently left to the nurse.

Selection of Quarters.

The proper character of the room is of greatest importance in the treatment of the disease. The sick room shall be on the sunny side of the house and capable of thorough ventilation. Care is to be taken that in ventilating the room draught is to be avoided. The patient is also to be protected from direct strong winds, which is easily done by placing a screen, or, in the absence of such, by stretching a sheet in the front of the open window.

*A series of lectures given to the Seniors of the Jewish Hospital in Brooklyn.

Temperature.

The temperature of the room is to be kept at about 66° to 68° F. Only in exceptional cases where the patient is suffering from diseases of the upper respiratory tract, it is desirable to have a slightly higher temperature in the room, say around 70° F.

The moisture of the air in the room is not to be overlooked. Most of our dwellings are defective in that respect. The air is rather dry because not enough attention is paid to thorough ventilation. While we are paying the penalty of this excessive dryness, we may not feel it so much while we are up and around, because we, off and on, slip outside and counter-balance the impure inner air by the moist atmosphere outside. But while we are confined to bed the thoughtful nurse will bring a great deal of comfort to the patient by trying to moisten the air in the natural way by effecting a thorough ventilation, or by artificial means, like placing a kettle or a dishpan of boiling water in the room, or hanging a wet sheet in front of the register or the steam radiator. This is particularly important during the winter months when the windows are kept tightly closed and the room is overheated, and the patients suffer greatly from catarrhal conditions of the respiratory organs.

Bed.

I will not dwell long upon the bed which you are to prepare for the patient. You all fully appreciate the necessity of keeping this bed ideally clean by changing the clothes as frequently as possible. We recall the refreshing effect of a new suit of clothes. You will not forget to spread a rubber sheet on the mattress to protect it from soiling, and you shall also keep in mind that the bed sheet shall be well stretched and fastened securely

with safety pins to the sides of the mattress. This little attention insures great comfort for the patient, who, tossing in bed involuntarily wrinkles the sheet, not being able to unfold the cutting linen. Such folds of linen are in part responsible for bed sores in very sick people who are compelled to lie on their backs for days. I will not dwell on special beds at times used like a water or air bed. They are very expensive and rarely used in private practice. I will also mention only the different pads and rings which are used to relieve certain parts of the body from pressure. You have seen them all used in the hospital wards and their purpose is clear to you.

Bath.

It is hardly necessary for me to mention to you that the body of the sick is to be kept clean. I shall only say that a cleansing bath shall not become a routine practice in every case as soon as the nurse is called to the bedside. There are conditions where we must omit this most necessary element of personal hygiene and direct our attention to more vital phenomena, postponing the bath until the general condition of the patient is improved. It is always prudent to become familiar with the character of the ailment before exposing the body and applying water to the surface. Take, for instance, a woman who has just gone through the tortures of a protracted labor, tired and exhausted, bathed in perspiration; if she shall be exposed and given a cleansing bath with water of moderate or warm temperature, the exposure itself will produce a chilling of the body with at times quite serious consequences. The energy of the nurse ought to be in this case curtailed by reason. While giving the bath, the nurse gets the first opportunity to observe the patient bare of his clothes and she will not miss the chance to notice all of the external appearance the body affords. She will observe the color of the skin; its consistency; being soft, elastic, or dry and rough, hot or cold, wet from perspiration. She may notice swelling in one or the other part of the body. She may notice the vessels of the skin—if they are visible or markedly dilated. She may observe a flat or distended abdomen. The distension may be general or local, occupying the uppper or the lower part of the abdomen. A thorough survey of the body will give her the opportunity to observe the changes which may develop during the time the patient will be under her care.

Records.

All the observations made by the nurse shall be put on record. The physician expects a complete detailed written narration of all that happened during his absence. No matter how trivial or simple the change may be it is always worth while to put it in black and white. The bedside record shall represent the true and complete picture of the patient's condition, and while certain rules are generally expected and certain time is set for recording the patient's condition, this routine shall not slave the nurse. She shall not expect that the patient's condition will change to please the schedule. She shall keep a close eye on the patient's pulse, temperature, and his respiration, and not fail to record it outside of the legal hours. Such drawing away from the routine will at times give early notice of an important change in the patient's condition and give the doctor a possibility of forestalling a complication.

Temperature-Taking.

The temperature can be taken in axilla or in any other fold of the skin where the surfaces come in contact; by mouth or by rectum. That the thermometer is to be kept scrupulously and antiseptically clean is well known to you. The skin method does not give reliable figures and is rarely used. Temperature is very frequently taken by mouth. Although such shorten the stage of convalescence.

tory, it is to be kept in mind that a good many of our patients can hardly keep their mouths shut even for a minute, more so when their attention is directed to it. If the breathing through the nose is obstructed, the cool current of air will influence the figures; or if the patient has had a cool drink immediately prior to the time the temperature is taken, the registration will not be correct. And I think that the only proper and reliable method of taking the temperature is by rectum. The introduction of the bulb of the thermometer, greased with vaseline, does not offer any difficulty in most cases, and can be easily accomplished, after a little training, without exposing the patient.

Before inserting the thermometer we must be sure that the rectum is not filled with fissures, otherwise we will register not the temperature of the body, but the temperature of the fissures.

The contraindication for taking the temperature by rectum shall not be the patient's objections, but only local conditions like fissures of the rectum, inflamed hemorrhoids, or in inflammations, abscesses of the rectum, etc.

If the rectal temperature is once recorded it shall be continued to be taken through the same channel, otherwise, if at times by mouth, the temperature curve would be interpreted wrongly, because the rectal temperature is, as a rule, between one-half to one degree higher than the temperature taken by the mouth.

Pulse.

Pulse is taken at the wrist; not only the number of beats per full minute, but also the character of the pulse is to be noted. It is to be marked down on the chart whether the pulse was taken while the patient was lying down or standing, because changes in position readily influence the frequency of the pulse beat. The average normal pulse in adult man is from 60 to 70 per minute; while in woman it is from 65 to 80; in children the pulse rate is higher; above seven years it will be between 70 to 90, while in younger children—from one to seven years—80 to 100 is a normal pulse. The frequency changes in health, after a meal, from excitement, from the use of stimulants. The same factors will influence the pulse in disease. Therefore, in recording the pulse, the nurse should note whether any of these factors were present; whether at the time of taking the pulse the patient was unduly excited, whether a stimulant had been given a short time previously, etc. The character of the pulse is also to be noted, whether it is strong or feeble, regular or irregular, intermittent or dicrotic. If some beats are feeble while the others are strong such a pulse is called an irregular one. An intermittent pulse is one where a beat is now and then lost. In a dicrotic pulse the main beat is followed by a weaker one.

The nurse shall have to get thoroughly acquainted with the character of the pulse on her first examinations, so as to be better able to observe a change. Of course, the pulse can be taken at other parts of the body, but to appreciate variations we must take it at the same place on the same patient.

Respiration.

The number of respirations a minute shall be recorded. We must count the respirations the whole minute and without letting the patient know the object of our observation. A convenient way to count the respirations is immediately after taking the pulse, still holding the fingers about the wrist of the patient, making him believe that you are still counting the pulse. Our respirations are readily influenced when our attention is called to them. Not only the number, but also the character of the respirations shall be recorded. Deep or shallow, free or painful, loud or quiet. Excursions of the chest shall have their significance. The bare figures give very little information.

All these data with necessary remarks shall be accurately recorded on the chart, and this chart kept away from the patient. The data are for the information of the physician only, and the curiosity of the patient or his friends shall not be satisfied without the permission of those attending, because unnecessary anxiety and worry can only have a bad influence on the course of the disease.

We have discussed the classical trinity of symptoms which are so prominently lined off on the record sheet, but by taking the temperature, pulse and respiration, the nurse has not by any means done justice to her recording duties. There are other lines on the sheet and all of them ought to be neatly and clearly filled out, for no matter how simple the case may be there is abundant opportunity for the nurse to find enough material to cover the space and even get short of paper, if she chooses.

Position of Patient, Nausea, Vomiting.

Take, for instance, the position of the patient, which is significant. The patient occupies a certain position not only at will, but because he finds more comfort in one than in another. Patients suffering from peritonitis will prefer, or rather be compelled, to lie flat on their backs with knees drawn up to relax the abdominal muscles and relieve the intra-abdominal pressure. A patient with pneumonia prefers to lie on the affected side to give the opportunity for the healthy lung to expand more freely and substitute the deficiency in oxygen caused by impaired function of the inflamed one. Very ill patients, unconscious, in a comatose state, lie on the back continually, thus favoring a congestion of the posterior portions of the lung, causing what is known as hypostatic pneumonia, and also a congestion of the skin on the back facilitating the formation or development of bed sores. In such cases the nurse shall see that the patient be turned repeatedly from one side to another, thus trying to equalize circulation.

Another symptom to be mentioned on record is nausea or vomiting. Is the nausea a constant symptom, or does it occur only occasionally after taking food or medication? The quantity and character of the vomit is to be noted. The color, is it green, red, or blackish—coffee-ground vomiting? Is the vomiting hard after considerable retching, or easy without nausea, so-called projectile vomiting frequently observed in meningitis or brain diseases?

Diet List.

The diet list order for the patient is minutely to be carried out. It is of importance to the physician to know the quantity of food consumed by the patient, and the laconic words on the sheet, like "breakfast," "dinner," and "supper" are too mute to be appreciated. It shall be minutely stated how much of the food the patient takes. Has he taken it readily? Did it appeal to his palate? Did he reject it on account of the lack of appetite? Or did a certain dish not appeal to him?

When we speak of food we include also water, and it is of importance to know the number of ounces of fluid of all kinds consumed by the patient in twenty-four hours. If we, for instance, collect a twenty-four-hour specimen of urine, the number of ounces voided would not indicate much if we do not know the number of ounces taken in by the patient during the same period of time. Only by comparison of the intake and output can we appreciate the excretory function of the kidney.

Pain.

Pain is to be recorded. Of course, being a subjective symptom, we can only report the statement of the patient. The location and character of the pain ought to be marked down, no matter how trivial

and unimportant it may appear to be. Even a temporary passing pain has significance and the patient may easily forget to present it to the doctor on his next visit.

The expression of the patient's face must be carefully watched. Is it pale or flushed; is it red or has it a bluish hue; cyanotic, indicating deficient oxygenation of the blood; is it quiet, contented or anxious? Is the patient dull and apathetic, not taking interest in his surroundings? All these changes have their interpretation and significance.

Cough and Expectoration.

Another symptom which ought to be described in full. Is the cough painful, unproductive, or easy and accompanied by expulsion of mucus; and the character of the mucus? Its color; its consistency. It can be frothy and watery, rusty, adhering to the vessel. It may be the color of prune juice in the first stages of pneumonia; or if the odor is offensive as in gangrene of the lung. Or it may have the appearance of pus and come up in large quantities during fits of coughing, as is observed in cases of abscess of the lungs. It may be bloody or only streaked with blood. The sputum ought to be collected in special sputum jars which are to be emptied frequently and kept antiseptically clean. It is advisable to keep these jars closed, not to contaminate the air of the sick room by dried-up particles of mucus, and on the other hand preserve the specimen in an unchangeable state, as it is produced by the patient for laboratory examinations. Very ill patients shall be helped during the attacks of coughing, and the receptacle to be brought to them to collect the expectoration. By no means allow the patient to raise himself and bend over in bed to get the jar or expectorate in a vessel placed near the bed. Such an exertion on the part of the patient is at times dangerous and ought to be avoided. Even spitting in a jar is fatiguing. In such cases the expectoration shall be collected with gauze or tissue paper, which shall be burnt up as soon as soiled.

Breath of the Patient.

The odor of it is to be observed in diabetes. A sweetish odor like chloroform; ammoniacal odor like urine; or a fetid odor is caused by decayed teeth, dyspepsia, severe constipation, etc.

Sleep of the Patient.

"Slept well; slept fairly well; slept little." What does it all mean? Very indefinite information indeed. Is the sleep quiet and restful, refreshing, or does the patient sleep all night and wake up still more tired than before he went to bed? Does he quickly fall asleep, or does he sleep for a short while and then remain awake for a few minutes, an hour or two, to drop off again to sleep? Notice if there is any twitching of the muscles during sleep, muttering, or any sign of delirium. The kind of delirium must be noted. Is it quiet or noisy, muttering, picking at bed clothes, or at imaginary objects, or violent? If so, at what time? It is quite frequent that the patient appears rational during the doctor's visit, while at other times he may be quite delirious. Even the mildest forms of delirium have great significance, and such patients must be watched very carefully and not be trusted. The most terrible accidents occur during the few moments when the nurse left the delirious patient alone, stepping out into another room, without having somebody relieve her and watch her charge.

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CARE OF RUBBER GLOVES.

A manufacturer of rubber gloves gives the following directions regarding the care which gloves should receive:

"Never leave grease or oil on gloves. Keep the gloves dry and liberally dusted with some moisture-absorbing powder, such as French chalk, starch, or lycopodium. Keep the gloves at full length or

rolled up, never folded, or keep the gloves entirely submerged in water or weak antiseptic solution and away from direct sunlight.

"Probably the best method of putting on is for the nurse to grasp the inside of the glove (gauntlet turned back) with both hands, holding palm surface of glove down and fingers inward, while the surgeon, with hands under water, introduces his hand.

"Never try to remove gloves by pulling at the fingers. Grasp the top of the gauntlet and pull the glove inside out. Submerging the gloved hand in water or pouring water into the gauntlet will cause the glove to slip off easily."

* * *

VISITORS IN THE SICK ROOM.

J. H. Ashbranner, in the *Eclectic Medical Journal,* insists that not only should all visitors be excluded from the sick room, but the nurse should not be permitted to carry on conversation with the patient, relate the happenings of the day, nor read to him. We insist on absolute rest of the body in bed in low forms of fever and debilitating diseases and following serious surgical operations, yet permit the patient's mind to be filled with all sorts of ideas, which become confused and distorted in his weakened condition, and involuntarily his poor, tired brain labors and labors, and strives in vain to straighten out the tangled threads of thought awakened by loquacious visitors and talkative nurses, until delirium supervenes.

A friend of the author's, who is now superintendent of schools in one of the leading cities of this State, told him that he suffered a relapse of typhoid fever three times because he insisted on reading Dickens' novels during convalescence, which overtaxed his strength. Absolute rest of mind is as essential to recovery as absolute rest of body, and this rest should extend well along into the convalescent stage, until much of the lost strength has been regained.

All this may seem to be useless and superfluous to some, but the following incident is evidence that too many, eminent in the profession, fail to appreciate the importance of this subject:

In January of this year, David Graham Phillips, of New York, noted novelist and editorial writer, formerly of Madison, Ind., was attacked by an assassin and shot six times. He was removed to Bellevue Hospital, and the surgical skill of the metropolis was enlisted in his behalf. The following is taken from the press dispatches twenty-four hours after the assault: "He had been conscious all day and had received visitors, among them his sister, his brother, Senator Beveridge, of Indiana, and several writers. About nine o'clock at night the patient took a turn for the worse, and, although the surgeons did everything in their power, the end was inevitable." And this during the first twenty-four hours after the assault, in the year 1911, and in Bellevue Hospital! Phillips was a man of fine physique, full of vigor and in the prime of life, but he was not given a chance. Six bullets are enough for any man to entertain, without being compelled to entertain visitors and listen to their chatter, which can only annoy.

But it is not in the very severe cases only that visitors should be excluded from the sick room, but in all cases of ordinary severity. A sick person, even though slightly indisposed, does not feel like playing host or hostess to callers, and to do so is to impose upon the afflicted useless exhaustion and consequent fatigue. In such diseases as appendicitis, pneumonia and influenza, and following confinement, patients should not be allowed to see callers until they are able to leave their beds. Diligence along this line will make for the comfort of the patient during the active stage of the disease, and will hasten and shorten the stage of convalescence.

MEDICAL PHARMACY.

PRESCRIBING MATHEMATICALLY.

"SCIENTIFIC prescribing," writes Xrayser, in a recent number of the *Chemist and Druggist*, "we are sometimes told, is dead and buried. If the term meant such prescribing as was schemed out by Jacob-Ebn-Izhak-Alkhendi, who lived at Bagdad in the ninth century, not many of us would wish to see it resurrected. I get the particulars of his theory from Sprengel's 'History of Medicine,' published about a hundred years ago, and Sprengel takes it from Alkhendi's work on the 'Degrees of Compound Medicaments.' Alkhendi was a mathematician as well as a physician, and he worked out his prescribing theory from Galen's doctrine of hot and cold, humid and dry drugs. Alkhendi gives the equation $x = bn\text{-}1a$, and explains it thus: a is the first degree, b the last, x the exponent, and n the number of the terms. Then follows the application to remedies:

"The first degree results from the multiplication of an equal mixture by two; the second of that of the total of the first degree by two, and the third of that of the second degree by two. Thus, the total of the second degree is the quadruple of the equal mixture, and that of the third eight times stronger than that mixture. The total of the fourth degree is equal to the uniform mixture in the sixteenth quality, and to the first degree in the eighth quality.

"This may be obvious enough to experts, but Sprengel has pity on those of us who are not wranglers, and therefore 'to render the explanation clearer,' offers an example of one of Alkhendhi's prescriptions, which, I understand, is quoted from his work. This is the formula:

	Hot.	Cold.	Humid.	Dry.
Cardamoms, 1 drachm..	1	½	½	1
Sugar, 2 drachms.....	2	1	1	2
Indigo, I drachm.....	½	1	½	1
Myrabolans, 2 drachms.	1	2	1	2
	4½	4½	3	6

"This compound medicine is exactly balanced as regards hot and cold, but the dry qualities being double the humid ones, the mixture is dry in the first degree. If the total had been twelve of the dry to three of the humid, the mixture would have been dry in the second degree. Let it be remembered that these hot and cold, wet and dry medicaments of the first, second, third and fourth degrees had to balance cold and hot, dry and wet, diseases of the same number of degrees, and that medicines adapted for one part of the body were rather rigorously not permitted to trespass on the domain of those applicable to another part, and it will be admitted that the conscientious prescriber on these principles fairly earned his guinea, or whatever he got. The theory of degrees had been floating about among theoretic physicians for some centuries before Galen, but it was he who put it into dogmatic shape; and it pretty well held the field down to the seventeenth century."

OINTMENTS, WITH SPECIAL REFERENCE TO THE SUBSTANCES USED AS BASES.

Wild tells us in the *British Medical Journal* of July 22, 1911, that a number of experiments have been made to determine the relative protective and penetrative powers of the various bases, and also the extent to which certain active drugs were absorbed by the skin when applied to it in the various combinations. The experiments were made by rubbing a carefully weighed quantity (usually 10 grains) of the ointment or base into a definite area of skin (usually twenty square inches) for a fixed time. The ointment was then scraped off the rubbing finger and the surface of the skin by a dulled Gillette safety razor blade fixed in a convenient handle, and again weighed. To avoid the necessity of

wiping the instrument the scraper is weighed with the ointment both before and after rubbing. With a little practice consistent results may be obtained. The loss of weight represents the amount of ointment absorbed, together with the amount lost in manipulation; as the latter is fairly constant in dealing with preparations of a similar consistency the results afforded a relative indication of the respective amounts absorbed. There may, of course, be a possible slight gain from secretion and epidermis removed from the skin by scraping, but if the skin be dried before the rubbing, experiment has shown that this factor may be neglected, as it is the same for each application and does not affect the relative results.

These experiments are still in progress, but sufficient results have been obtained to confirm the generally accepted views as to the relative penetrative powers of the usual bases.

Soft paraffin and paraffin ointment appear to be hardly absorbed at all, but remain on the skin as a protective layer for a considerable period. Lard and olive oil are absorbed to a considerable extent, about 15%, after two minutes' rubbing. Hydrous wool-fat, 20%, provided the proper amount of water is present; old samples partially dried are less absorbed. Owing to its powerful adhesive properties no reliable result was obtained from anhydrous wool-fat.

The greatest loss of weight occurred from a mixture of equal parts of glycerin of starch and hydrous wool-fat, which is a useful base when a comparatively non-greasy emollient is required.

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HYPODERMIC MEDICATION.

D. L. Field, in the *Physicians' Drug News*, makes a plea for the use of the hypodermic syringe in administering medicines. Says he: "The writer practiced medicine for several years before he had the advantage of a hypodermic syringe, and those of us who had to depend on rectal absorption of medicaments, where gastric conditions would not tolerate medicinal agents, can appreciate what a boon the hypodermic syringe is. Then the slow action, where conditions demanded quick results, was embarrassing as well as aggravating. The patient ofttimes manifested impatience because relief was tardy."

The author continues: "I wonder now how we got along without the hypodermic medication. We depended on inhalations and inunctions which were temporary expedients often till rectal absorption should manifest results in relieving pain and quitting gastric irritability which, when secured, we exhibited medicine by the stomach. There are but two kinds of practitioners who can banish pain and disease without the hypodermic syringe and those are homeopaths and Christian Science Healers. They can dispense with both medicine and syringe, as 'sugar' and 'faith' will work miracles. The writer is not so supernaturally endowed that he can heal without the aid of active measures, and often the most potent agencies and those agents in numerous cases are administered under the skin.

"While the use of the hypodermic syringe is often indispensable, there is such a thing as a disposition among physicians to resort to it entirely too often and many times when it is entirely unnecessary. It must be remembered that somehow the laity associate its use with morphine or, as they say, 'dope.' The almost indiscriminate use of it is more likely to be a practice with the younger doctors than it is with the older ones. A physician exhibited a hypodermic syringe claiming that he had used it more than a thousand times. In a practice of a little over forty-four years I know I have not resorted to its use more than half that often. The result of such excessive use is to create a demand for narcotics sometimes to an alarming ex-

tent. As morphine is used nine times out of ten it can be well imagined how liable the morphine habit is to be formed.

"Another point I have always carefully observed is to keep both syringe and needles absolutely clean, and to see that the site of the injection is prepared by cleaning and bathing with alcohol. I also avoid plunging the needle hurriedly right down into the integument, but gently gather up the part between my thumb and finger and pass the needle upward obliquely.

"I use nearly all the hypodermic triturates, but principally morphia and atropia, heroin hydrochloride, digitalin, strophanthin, strychnia nitrate, nitroglycerin, ergotole, etc., and frequently brandy. As a rule there need be but four agents for medication hypodermically.

"There is a weakness on the part of some physicians to make a display and endeavor to impress the laity by flourishing a syringe, just as they do in the lying-in room by displaying from fifty to a hundred dollars' worth of instruments. They imagine it produces a sublime awe and admiring wonder upon all around.

"Let us be reasonable, conservative and temperate in using hypodermics, but don't hesitate when occasion demands them."

* * *

THE ELECTRON AND THE ATOM.

In our college days we found no difficulty in defining an atom. The old Daltonian view reigned supreme at the time, and one had but to repeat, without much thought, the words as they stood in the first chapter of text-books on chemistry. It was all so simple, and so meaningless, although we did not suspect at that time that we were repeating a mere formula, parrot-fashion, *Nous avons changé tout cela!* The atom has betrayed itself to be a very complex thing indeed; it no longer stands alone, but has another entity associated with it, the electron. This new theory has recently formed the subject of an address by Sir William Ramsay, delivered before the Chemical Society in London. We reproduce the following report, as published in an English journal:

"By way of more intimate introduction to the subject of his address Sir William quoted, with approval, Dr. Johnstone Stoney's definition of an *hypothesis*—as something likely to be useful; of a *theory*—as something we hope will prove true; both being distinct from a *fiction*, which has its true place in the realm of art, but has nothing to do with science. Sir William suggested that, accepting that definition, the conception of the electron as an element might be spoken of as an hypothesis, since it seems likely to prove useful. He then outlined briefly the modern view of an electron as a ponderable particle of negative electricity, which can occur free in the form of 'rays,' but usually exists in association with a relatively large mass of matter—viz., the atom of an element; the Daltonian 'atom' being a combination of an atom with one or more electrons. The number of electrons associated with an atom is indicated by the valency of the latter, each electron being the physical explanation of the vague idea of a 'bond of affinity.' Thus the atoms of sodium and hydrogen have each one electron associated with them, and the formulæ for these atoms should strictly be written NaE and HE, respectively, E being in each case the electron symbol; or the dash once used to represent the single 'bond of affinity' might be used in place of the symbol E thus: Na— or H—. Sir William went on to advocate as a useful species of mental gymnastics the compilation of such formulæ for complex substances, though he could not recommend them as convenient substitutes for the formulæ of today, *e. g.*, NaCl becomes NaEECl, and for more complex bodies, including heptad and

octad elements, the formulæ become painfully cumbrous and unwieldy.

"Sir William acquired much skill in manipulating such formulæ, and he wrote on the blackboard a series representing the cobalt amines, and showed how the new hypothesis might prove a particularly valuable tool in the investigation and explanation of the curious electrolytic relations of such complex inorganic substances.

"Reverting at the close of his address to a subject touched on at the beginning, viz., the relationship of the 'single' and 'double' fluid theories of electricity to those now beginning to be formulated—the Professor drew an interesting analogy as exhibiting the present position of chemists and physicists in the matter. He supposed that if a body of *savants* had existed at the end of the eighteenth century, who had confused between the theory of phlogiston and that of combustion by oxidation as enunciated by Lavoisier, by supposing that a substance might both undergo oxidation and lose phlogiston, such a body of men would have been in much the same position as chemists and physicists are today with regard to the newer hypothesis."

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RHUBARB PILLS.

Rhubarb pills are the subject of an historical note by X-Rayser II, in the *Chemist and Druggist.* It appears from his researches that this simple and popular remedy enjoyed considerable vogue among the great ones of the earth at divers times. In the Record series of State Papers are some letters of the period of Henry the Eighth, in which reference is made to these pills. Under the date of March 21, 1524, Francis the First of France, *"le roi des gentilhommes,"* wrote to Anne of Montmorency, Marshal of France, that "Madame" (Louise of Savoy, his mother, celebrated for the part she played in bringing out the League of Cognac, and later the Peace of Cambrai), was much troubled with a slow fever (*tres fort tormentee de fiebure continuelle*). Five days later he writes that she is out of danger and on the way to health, thanks to the "bonne operacion" of nine "pillulls de Deubarbe." These pilules of rhubarb were probably, the writer quoted suggests, the preparation of the younger Meuse, whose formula was later taken into the Augsburg Dispensatory of 1601 and afterward into the first London Pharmacopœia. If this be so it may be considered the earliest progenitor of the present official compound rhubarb pill.

The constituents of the pill were rhubarb, citron, myrabolans, lozenges of diarrhodon, licorice juice, juice of wormwood, seeds of smallage, fennel, and a species of hiera picra; fennel juice and honey were added in sufficient quantity to make a mass. The formula was omitted from the next edition of the London Pharmacopœia; in the edition of that work, published in 1721, a much simpler formula for a rhubarb pill appeared, the constituents called for being rhubarb, resin of jalap, tartar of vitriol, and oil of nutmeg, thin extract of gentian being used for massing. After awhile this formula, too, was dropped, and it was not until some time before 1810 that the compounded rhubarb pill was included in the Edinburgh Pharmacopœia. The formula called for one ounce of rhubarb, six drachms of Socotrine aloes, one-half ounce of myrrh, one-half drachm of oil of peppermint and syrup of orange peel sufficient to make a mass.

This formula passed into the London Pharmacopœia in 1836, oil of caraway being substituted for oil of peppermint.

It may be remarked that rhubarb is mentioned for the first time as a medicine in the writings of Alexander of Tralles, a native of Lydia, in Asia Minor, who lived toward the end of the sixth century, and is recommended by him as an astringent.

TABLETS.

The *Journal of the American Medical Association* complains that the much-used tablet, compressed or triturate, doubtless renders much medication valueless, and perhaps, fortunately, harmless. The speed of solution of most tablets on the market is problematical, hence if the action of a tablet is immediately desired it should be predissolved, or at least crushed by the teeth before swallowing, and then a good drink of water taken with them. It should not be forgotten that anything that may bite or irritate the membrane of the mouth will do the same to the mucous membrane of the stomach. Hence bromide tablets should never be taken undissolved. Potassium chlorate tablets dissolved in the mouth or swallowed are dangerous. Potassium chlorate solutions for the mouth and throat are valuable, but there is no justification for ever taking potassium chlorate into the stomach or into the system.

The *Physicians' Drug News* points out that many improvements have been made in recent years in the manufacture of tablets, and the maker who does not supply tablets that quickly disintegrate is behind the times.

The friability of a tablet can be quickly ascertained by dropping it into warm water.

We have frequently had occasion to direct attention to the importance of giving plenty of water with all tablets that are likely to cause irritation, such as the bromides, salicylates, etc. If this is done there will be no complaint of irritation if the tablet is as friable as it should be.

Volatile substances should seldom be given in tablet form. Many doctors overlook this fact. The writer has before him now a formula submitted by a physician who desires to know if it would make a satisfactory tablet; this formula contains chloroform, all of which would evaporate during the process of manufacture.

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THE LAURENT METHOD OF PURIFYING DRINKING WATER.

The Laurent method for purifying drinking water is based upon the reducing action of sodium thiosulphate on potassium permanganate when added in excess. The manganese is precipitated in the form of hydrated sesquioxide, while the thiosulphate passes into a sulphate or, perhaps, tetrathionate.

The purification of the water is effected as follows: To every 100 litres of water is added a mixture of 30 centigrams of potassium permanganate and 60 centigrams of alum, and the whole shaken; then, at the end of five minutes a mixture consisting of 30 centigrams of sodium thiosulphate and 60 centigrams of dry sodium carbonate is added. The reduction takes place immediately; five minutes later the water is filtered through cotton, and a clear, tasteless liquid is obtained, sterile, or nearly so.

If the water is very impure, the quantity of the reagent is doubled or even tripled; the purification may be regarded as complete when the rose color persists from four to five minutes after the first addition of the chemicals.

In order to simplify the manipulations, the reagents may be prepared in a compressed form, *i. e.*, in tablets.

The separate reagents used for 10 litres of water is seen, from the foregoing, to be 90 grams. Hence tablets of this weight can be prepared, one of each to be used for the volume of water mentioned; they are easily distinguished from another by the difference in color.

The process may be used for larger quantities of water; the reagents used are harmless and inexpensive, and without influence upon the quality of the water.

ELECTRO-THERAPY.

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SOME EXPERIENCES WITH THE USE OF THE ELECTRO AND PHOTO-THERAPEUTIC MODALITIES.

BY G. M. DUTT, M. D., Hudson, Mich.

DURING the last ten years many radical changes have been made for the treatment and cure of diseased conditions by the newer modalities. In many cases heretofore there was no relief except by surgery; and with the impetuosity and dexterity of the man behind the knife, who dared to enter nearly every recess of the human body with impunity (and always with results better or worse), the field of surgery grew to such proportions as to fairly eclipse the medical side of treatment, but which still existed under the halo of the surgeon's knife.

When the pendulum has swung to its farthest point, it always starts on its way back, and we are today witnessing it in the physician's ability to cure many of these serious maladies by the use of the various electrical modalities now at our service.

The surgeon has not lost any of his glory of achievement, though his sphere is narrowing, while the physician's horizon has been clarified and illuminated, helping him to accomplish what was impossible before the advent of electro-therapeutic methods.

Much discredit has been brought to these methods through the early haphazard use of them by those who would not take the time to make themselves proficient; but now we have a scientific working basis, and the results are all we can expect, and many times brilliant.

I can not better demonstrate the many uses of electricity for the cure of diseases than by giving some illustrative cases with their respective treatment.

Case 1—Lady, about 50 years old, came to me about a year ago, suffering with violent menorrhagia, or rather metrorrhagia, which I found on examination was caused by a uterine fibroid, about one-half as large as an adult head. This trouble was of many months' duration, and patient was nearly exsanguinated. Pulse fluttering, complexion was a yellowish white, and even the pigment around the vulva nearly gone, from the excessive loss of hemoglobin. Patient could not get around now, nor wait on herself because of weakness. As she could not come for treatment, I must get her so she could; so I made a thorough currettement and swabbed out the uterus with full strength carbolic acid, which closed up the bleeding points and checked waste.

In two weeks from that time she was able to come for treatment, and I immediately began intrauterine galvanism. I alternated the negative poles with the positive part of the time, finding the positive, when used too much, having a tendency to close the cervical canal, and prevent free entrance to uterine cavity. Used a large pad outside either back or front, and had to change because of external irritation, and a zinc internal electrode amalgamated with mercury. The amount of current given would vary as she could tolerate it, running from forty to seventy milliamperes, from ten to twenty minutes, every second or third day as conditions would warrant. This loads the lymphatic channels, and we must beware, lest we do too much at one time.

After four months' treatment we found the tumor fast disappearing, and after two months more of treatments given from once to twice a week, the tumor had disappeared completely, and has not felt any farther trouble from it. She began to do her housework after the third month. Is this not better than an hysterectomy?

Case 2—This case was a gentleman about 65 years old, with a badly enlarged prostate gland of between two and three years' standing.

Reached a point where they could not catherize him, and had to puncture the bladder through the abdominal walls. Went to Detroit to consult a specialist who referred him to another, and finally to a surgeon, who said there was nothing but an operation for him.

Went back to prepare to go and have it done, when he met a former acquaintance that had had exactly the same trouble a year before, with an operation on for the next morning, which he declined, to come here, with the result of a cure in less than two months.

This man was prevailed on to come here instead of having the operation, with the result that he said at the end of four months' treatment that he was as well as ever. How was this done? Gave negative electrolysis, five to ten milliamperes, every two or three days in the urethra until made a sufficient opening to urinate fairly well; then alternated that treatment with saturated solution of iodide of potasssium by cataphoresis with rectal electrode for that purpose, and at the end of four months sent him away perfectly well.

I used along with the first two months' treatments the new therapeutic lamp of 500-candle power to follow the treatments, to control and prevent any inflammatory process, which it did admirably.

In the latter months I used the vacuum rectal tube with the high-frequency current, both for its tonic action and the violet rays, and the results attained were satisfactory to the patient, as well as your humble servant, for results are what we are working for.

I could give many other cases on this line, but these are real severe ones and illustrate the power of galvanism, when administered with a scientific precision. The new beginner had better be on the safe side though in work in the urethra, and not use too strong a current, for it is a very sensitive portion of the economy, or he will make a bad matter worse.

I shall not in this article discuss any feature of X-ray work, but wish to mention one of the later uses I have been making of the high-frequency current, in the destruction by desiccation or drying of any external neoplasm, or in the cavities of the body where accessible.

This method has been operated by Wm. L. Clark, M. D., of Philadelphia, by the use of a very large static machine, where the amperage is very small. Not having such a machine, I determined to take the current from my X-ray coil of small amperage, and pass through the high-frequency coil. Then I insulated my needle-holder farther by inserting it in a tube of rubber to fit it so I could handle it easily, and made connection to one arm of the h.-f. coil. The current was delivered from the point of the needle, and was always under perfect control. Then I began experimenting on myself as well as in other ways. Found the sparks were somewhat sharp and tingling, but less as they were continued. Then used it on some meat, liver, and lastly soap.

To be positive it would not burn, I then placed common wrapping paper over the object to be acted on, and found no action in the least on the paper, while the effects were to all appearances the same.

Have thus far used a local anesthetic to the part, either by a hypodermic injection or cocaine phoresis, and the results have been more satisfactory than by the older method of electrolysis, with a needle transfixing the base of the neoplasm.

The first case I treated was a vascular growth filling one side of the nose, with base attached to the lower part of the septum about one-half inch. Would bleed on being touched. Used a hypodermic of cocaine in the base of it and with a two-minute application to the base. I told the patient to report in five or six days. It had dropped out the fifth day and healed nicely in about one week more.

Next case was a keratosis (a horny growth fully half-inch long on the nose about the end of the nasal bone) of some years standing.

Treated the base of it as above, and that night it came off; since which time it has healed nicely.

Now this method has some features very much to its credit.

The application is strictly antiseptic, and if there was any infection it would be neutralized, for the current carries with it a liberation of oxygen and the violet rays. Many other applications of this modality could be mentioned, but have not the time in this paper.

Suffice to say, its action on warts, moles, birth-marks, lupus, etc., is fine in results. In epithelial cancer, its action is so quick and antiseptic as to give it preference to many other established methods.

Lastly I wish to speak of the new light therapy. Though it is not electricity, it is another manifestation of it, and of such a wide range of utility as a therapeutic measure that it deserves more than passing notice. I have had it in daily use now for three years, and with the passing time I am becoming more imbued with its virtues than any other single modality. The cause of disease is either a loss of cell vitality, or an over-stimulation of them, producing thereby a perverted cell action. Here is where the light shows its most marvelous action. It causes an extra flow of blood to the parts, which means extra oxygenation and metabolism, besides its stimulating action on the lymphatic system. Its tonic and vitalizing properties to the nervous system as well as other portions of the body, I have demonstrated so many times they are marvelous. I shall not give any cases treated, with technic, but more of its use in a general way. I have cured every case of appendicitis for the time I have had it, without a recurrence, and I have had my patients able to walk around most of the time. These cases were from the light inflammatory type to those so full of pus as to bulge the abdominal cavity. Others of the recurrent type also, which I do not warrant to stay cured, but which have thus far not failed once.

As an adjunct in the treatment of tuberculosis, I think it without a peer in that realm. Night sweats are soon corrected, cough ameliorated, appetite revived, and general reinvigoration of the system, with a gain in one case of fifteen pounds in one month.

In rheumatism and neuralgia, it relieves the pain and helps them in so short a time that I have begun to tell them they will see the benefit from the first treatment. This is more quickly manifested in the old chronic form than in the acute inflammatory cases.

This is only a mention of some of its uses in those serious conditions where it proves itself so efficient; and if able to overcome the above diseased conditions, you can form some idea of its wide range of usefulness.

If these few cogitations miss the waste-paper basket, perhaps it may result in some future emanations.

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X-RAY TREATMENT OF GOITRE.

J. N. Scott, in the *Journal of the Missouri State Medical Society,* does not think that in those cases in which the secreting portion of the gland is gradually enlarging, they should ever be operated on either by cutting off the blood-supply by ligating or removing part of the gland; although good results

appear very shortly after, the operation does not prevent the continued enlargement of the remaining portion of the gland, and this will nearly always take place, leaving the patient as bad off in a year or so after the operation as before. These cases should all be treated by the X-ray.

In the treatment of sixty-eight cases all have improved with the exception of five cases of acute enlargement of the gland, in which the patient died before the X-ray had time to produce any effect. Many of these cases have gone over a period of four to six years and are symptomatically cured.

When the X-ray once destroys a tissue it is very seldom that it ever returns. As an example of this, the author cites the case of chronic necrosis produced in X-ray operators. When the skin has once been destroyed over a very large area, it generally will not grow in of itself, but skin grafting or some stimulating treatment has to be resorted to, and even then it is oftentimes six months to a year before repair takes place. The nails have a lowered resistance to the X-ray, and when they are destroyed by it it is seldom that they ever come back.

The X-ray has a special action on gland tissue which is enlarging. This is especially true in the thyroid gland and the spleen. The thyroid gland is comparatively superficial and if the correct dose of the ray is given we can generally destroy a part of it without destroying the healthy skin. In these cases it is all-important to give the right dose. The X-ray in small doses is a stimulant to any structure. If this dose is increased a little it produces a local alternative effect; that is, the parts will be destroyed, but repair will take place as rapidly as destruction. If it is applied to the skin in this way, the outer skin will peel off on an average of ten days after exposure, but a new skin will have formed and taken its place. If this dose is increased still further destruction will take place more rapidly than repair and we get the so-called burn, which is in reality a necrosis. Just why this is so we do not know, but it is probably due to the effect on the trophic nerves.

There is no other agent in the world that acts like the X-ray. Any other agent which always destroys tissue will produce its destruction, generally accompanied by pain, within a few minutes, or at the most a few hours after the application is made. With the X-ray it is quite different. If one would apply the ray long enough today to a place on his hand, say two inches in diameter, sufficient to produce the necrosis or so-called burn, he would feel nothing at the time of application; in from three days to three weeks, but on an average of about ten days, a severe inflammation would take place with the accompanying necrosis. If the tissue were examined by a microscope before this inflammation started, it would be impossible to discover any change from the normal. So from the effects of the X-ray we can easily see how necessary it is to give the correct dosage; that is, the one which will destroy the enlarged secreting glands but not destroy the normal structures. Of course, care must be exercised not to destroy too much of the thyroid gland, as the results would be just as disastrous as removing all of it surgically. Fibrous and calcareous tissues do not have a less resistance than muscle and skin to the X-ray, consequently it is very easy to see why in those cases of enlarged thyroid, when that enlargement is due to the above causes and not to enlargement of the secreting glands, the ray should not be applied, and if it is applied, why we do not obtain favorable results.

Of course, there is a class of cases in which we have a mixed growth. In these cases it is advisable to remove part surgically and then give the patient a course of X-ray treatment to prevent an enlargement of the remaining gland structure at a later time.

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There is one other class of cases which the author speaks of, that is malignant disease of the thyroid. This is always a serious condition, and he believes the gland, after a diagnosis has been made, should be removed and the operation followed by a course of X-ray treatment.

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RADIO-ACTIVE BATHS.

Aikins and Harrison, in the *American Journal of Dermatology,* point out that the active agent in the baths is not radium itself, but the emanation which radium produces. Emanation is a gas; it can not penetrate the epidermis of the body as such, but is readily absorbed by the lungs and by the mucous membranes of the digestive tract. Emanation can, therefore, only act in the bath by passing out of the water into the air and being inhaled. When water containing emanation is drunk, a part of the emanation is taken up in the inspired air, and another part is absorbed from the stomach and intestines. Emanation behaves like every other gas which is not a normal constituent of the body. It is excreted to a very slight extent through the kidneys and to a large extent in the expiratory air.

When treatment is carried out by baths, the absorption is only continued as long as the patient remains in the atmosphere laden with emanation from the bath water, and the foreign gas is excreted immediately. On the other hand, when it is carried out by means of drinking waters, the absorption takes place slowly from the intestine, and the body is being constantly supplied with fresh doses of emanation for three or four hours after a single dose. When the patient is given from three to five doses during the day, emanation can be detected in the expiratory air at any period of the day.

In 1905, Gottlieb, of Joachimsthal, where a radium mine is situated, found marked medical results amongst the miners, who merely worked in and about the water from the pitchblende, and still more remarkable ones when in addition the water was drunk.

Dautwitz added pitchblende to existing indifferent thermal waters, with much enhanced results. Since then continuous success has been reported by others. The results in general may be summarized as follows:

1. Greatly increased diuresis and excretion of uric acid.
2. Largely increased carbonic acid exhalation from 20 to 60 per cent.
3. Lowered blood pressure, especially in arterio-sclerosis.
4. Decreased blood viscosity.
5. Great improvement of gastric and duodenal digestion.
6. Marked solvent action on gouty deposits.
7. The dislocation of uric acid and its salts into carbon dioxide and ammonia.
8. Inhibition of inflammation and relief of pains in rheumatism.
9. Increase of sexual vitality.
10. Considerable influence over sympathetic nerve affections.
11. Marked results in diabetes, albuminuria and glycosuria.

Permanent Centers of Radio-activity in the tissues can be created by the injection of either the soluble salts (bromides) in water or of the insoluble salts (sulphates). Emanations are generated constantly, and a small quantity of radium thus used produces a great amount of energy. Dr. Wickham has found that the insoluble salts injected into a tumor keeps the tumor radio-active for a long time. In the circulation of the horse, the blood is found to be radio-active for from six months to one year.

The dose given is from one to ten micro-grammes in water—five to ten injections extending over a period from ten to twenty days. Used in this way it has also been found to be a powerful curative agent in gonorrhœa, both male and female. The bactericidal power comes exclusively from the gas emanations.

Dr. Wickham has studied the action of these solutions upon the gonococcus and has proved that they have the power of being able to stop the development of cultures of this microbe even with a dose of one millionth of pure radium. Injections under and around torpid ulcers are found to be helpful towards a cure.

Ionotherapie Radique is the name given to the new form of introducing free radium with its gas emanations free. It is the ordinary use of ions—using a continuous electric current. The method is to place a solution of soluble radium on a linen, and the linen over the area to be acted on. It is covered with the positive pole and the negative pole is placed on the other side. The current passes slowly and the radium ion penetrates into the economy. The skin is maintained absolutely intact, and the radium by a special method can be found acting in the subjacent tissues, muscle, periosteum bone or neoplasms to a depth of from five to nine centimetres—2 to 3½ inches. The same result has also been arrived at by the use of radiferous mud with the electric current.

The Radiferous Mud may be obtained from the remains of the uranium ore after the extraction of pure uranium. This material is used exactly as the natural mineral muds. It contains a great quantity of iron. The radio-activity is produced more by actinium than radium. It is very much less radio-active than is uranium, but much more so than the natural mineral muds. It can be definitely stated that there appears to be a wide field for the therapeutic use of uranium mud.

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THE ARC IN MEDICINE.

Rockwell, writing in the *Medical Record,* thinks it would not perhaps occur to the uninitiated that chronic bronchitis might be an inviting field for the action of radiant energy. Reflection, however, should suggest its adaptability, and in a number of cases the author has been enabled to satisfactorily demonstrate its value. The results are not rapid, except as temporary comfort is afforded, which is often quite marked, but persistent effort has in several cases been followed by more or less complete recovery. It ought not to be difficult to understand how or why the combined luminous, calorific, and actinic rays of light in concentrated form should be the very best agent for the relief of certain forms of chronic respiratory disease. It has been claimed that this method of treatment has great value even in tuberculosis. The author's experience does not extend so far, but he can well believe it, and hopes that in some way and some time, it may be thoroughly tested.

For the relief of the symptoms of high arterial tension, both radiant energy and the electrical method termed autocondensation are unquestionably of value. The author has had experience with both and has frequently witnessed the lowering of pressure and the consequent symptomatic relief afforded by either method. A fact of no little importance in the treatment of arterial sclerosis is that no undesired depression of the heart's action follows. To what extent any curative action may follow the use of these methods in actual arterial sclerosis no opinion is attempted, but their power to control circulatory activity should render them of value in the earlier stages, and their use should go hand in hand with other and accepted methods.

In dermatology, phototherapy, or radiant energy, rather, is a valuable and too neglected remedy. As in the cure of lupus, it is the ultraviolet ray that is the efficient agent; so, too, in the more common and nonmalignant forms of skin disease, but fortunately it is not necessary as in the first condition to eliminate the heat rays in order to concentrate a sufficient strength of the ultraviolet. Indeed, the powerful light rays and the heat rays as well, if not too intensely focused,

probably add to the efficiency of the treatment. The incandescent light is of far less value, if not practically useless, in the treatment of skin diseases, but the arc light with electrodes made up with a combination of carbon, magnesium, and iron, is powerfully germicidal, and its destructive influence over pathogenic bacteria is seen in its power to limit the suppurative process and thus abort the development of abscesses.

While Rockwell has had no very large actual experience to confirm the strong theoretical considerations for its use in dermatology, he can yet point to a case of scrotal eczema, several of herpes zoster, one of acne rosacea, and several obstinate and rather suspicious cases of epithelial disease where the results have been good. It is a wonder to me that dermatologists do not evince a more distinct appreciation of their loss in neglecting this method of treatment.

There are a few points in technique in connection with the administration of radiant energy quite essential to success. While the individual frequencies are important, the ultraviolet for superficial action, the blue and others for deeper effects, yet it is the complex of radiant light energy upon which one must depend for all-around therapeutic effects. In order that the light should be as rich as possible in chemical rays the electrodes must be of the purest carbon combined with magnesium, potassium, and iron, which give off the maximum of ultraviolet, violet, or blue radiations. A reflector glass is far better than metal, since the reflecting surface of the latter soon becomes impaired and loses more or less of the concentrating power. The apparatus should be so constructed that the rays can be adjusted at will, giving either an intense convective heat or heat more diffused and milder. An important point in connection with this method of treatment, especially in neuritis and the relief of pain in general, relates to the length of the light exposure.

Time and patience are essential. The brief séances sometimes recommended are inefficient. Exposure should seldom last less than one-half hour, and not infrequently a much longer sitting is desirable. Especially is this the case when the area to be treated is large and irregularly located. While in the administration of the arc light there are no X-ray effects to be dreaded, as seems to be the fear of some patients, yet care is to be exercised in its use, particularly in low nutritional conditions. Here it is quite easy by a too liberal use of convective heat, aided by the chemical effects, to produce a local sore. Unlike X-ray effects, to be sure, healing takes place rapidly enough, but it is an unnecessary result and should be avoided.

VALUE OF THE X-RAY.

H. O. Wells, in the *Physicians' Drug News,* tells of his experience with this mode of treatment:

"I have used the X-ray daily," he says, "for the last seven or eight years. In fact, I have used it several times daily and I must say that I have gotten excellent results from its use. I have cured hundreds of cases of eczema and psoriasis that I am sure I could not have cured in any other way, at least other physicians had tried about everything under the sun without success. I know positively that the results were due to the use of X-ray, for in many of them I never found a case of psoriasis that would not yield to the X-ray, though in many instances it has returned or would return if allowed to do so. Many of the cases were easily and permanently cured. Chronic eczemas have yielded almost readily as would psoriasis. Some cases of acne that resist all other treatment will yield very readily to the X-ray. As a rule, a skin disease that itches will improve under X-ray treatments. I have cured old cases of sycosis that were deeply seated in the roots of the beard

and could not be cured by medical treatment. I have cured any number of tubercular glands, joints, and bones, and have cured a number of cases of pulmonary tuberculosis in which I believe the X-ray played the most important part in the treatment. I have made a signal success of curing old long-standing cases of suppurating otitis media, also frontal sinus disease. While speaking of skin diseases I forgot to say that I have cured lupus and epithelioma with the X-ray. I recently used it on a man whom several physicians said had a tumor of the brain, with very gratifying results. He had typical symptoms of tumor, including impairment of speech and excruciating pains in the head. All symptoms began to improve immediately under use of the X-ray, pain in the head ceased at once.

"The man is still under treatment. I could mention many interesting cases treated by the use of X-rays and I do not think a physician who makes a business of treating chronic diseases can afford to do without it.

"On the other hand I do not think he can afford to use it without knowing more about it than the average physician who buys a machine and attempts to use it without even so much as a text book on the subject. The average physician has only one tube and does not know a high tube from a low one, and he treats everything about alike with this one tube. The treatment will hit some of the cases, but not all of them. I have a dozen tubes and use the one I think best suited to the case in hand. I do not advocate the indiscriminate and haphazard use of the X-ray. I think the doctor who is going to use it had better get reliable instruction in the use of it, before he buys a machine. He will then know better what and what not to buy. I would advise a doctor expecting to do much work to buy the best machine that he can get and to have an ampere and milliampere meter on it so that he will know what he is doing.

"The doctor who is not well acquainted with his machine is liable to do great harm, and even the best operators can not be too careful. I would say in all cases be conservative and be safe. The same is just as true of many poisonous drugs in common use. I have used the X-ray perhaps fifteen thousand times and I think as much of it as I ever did. I would not do without it. In fact, just bought my fourth machine."

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TO PREVENT HARDENING OF PILLS.

It is well known that certain kinds of pills harden within a comparatively short time after they have been prepared, in which condition they often pass through the stomach and intestinal tract without dissolving. E. Otto, writing in the *Münchener Medizinische Wochenschrift*, states that this hardening can be prevented by the addition of a small quantity of manna to the pill mass, 5 grams of manna being taken for every 100 grams of mass. Every kind of substance —except potassium permanganate, which must first be rubbed up with paraffin ointment—is compatible with manna.

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NOTE ON SPIRIT OF NITROUS ETHER

The author makes the proposition that no spirit of nitrous ether should be kept in stock at all because of liability to deterioration. As is well known, this loss is occasioned by the volatilization of ethyl nitrite. He advises the use of two solutions, like Fehling No. 1 and No. 2, for the extemporaneous preparation of this spirit; the procedure being to mix a ½ drachm of solution of sodium nitrite with 7½ drachms of acidified alcohol to make 1 oz. of spirit of nitrous ether. He also suggests the use of lactic acid for acidifying the alcohol.

COMMUNICATIONS.

WHAT "THE NEW PSYCHOLOGY" STANDS FOR.

Editor MEDICAL BRIEF:

IT is with old clothes as with old ideas —a timely refashioning and perhaps recoloring will win back to the wearer his old stand in good society. Hypnotism, having lost its reputation as "good form" in practice, is remodeled, reinforced and reintroduced to the public conscience as the "New Psychology."

In place of dispatching the "subject" into the dark continent of the "sub-conscious," the new psychology takes recourse to a stimulation of the emotional susceptibilities of the patient to a point where reason and judgment lose their controlling influence over his sensorium.

The danger arising to a person's moral nature from an artificial stimulation of his emotions is constantly demonstrated in the overwhelming majority of vice and crime generated and developed in an over-stimulated and misdirected emotionalism. This psychological faking with man's selfhood and moral gravity, by overpowering him with the enchantment of his worked-up emotions, lures him away from his judgment seat of sober reason, while the operator silently injects his suggestions in the unprotected mind.

When shall the public be ready for the scriptural lesson that "every soul must work out his own salvation" and that they, and only they, "that live the life shall know the doctrine?" One single individual effort toward self-respect and self-redemption is freighted with infinitely more spiritual power and moral survival value than the skin-deep veneer of emasculate virtue and unearned peace superimposed by the stagecraft therapeutics of hypnotic suggestions.

DR. ADIL EMIL GILIXAN.

SCIENTIFIC MEDICINE.

Editor MEDICAL BRIEF:

The term "Scientific Medicine" is very commonly used but uncommonly understood. We often hear the assertion made that medicine is not an exact science, when, as a matter of fact, it is exact but not complete.

Science is merely systemized knowledge of the course of Nature in any particular branch. Man is not given original comprehension of Nature's methods and Nature's laws, but must acquire such knowledge by observation and accumulative experience. Human life is too short to make personal acquirement of knowledge concerning Nature and her laws of much scientific value because the field is so extensive, but the recorded observations of those who have gone before enable us to possess accumulative experience tending toward perfect knowledge. In retrospective we can see the errors that once were considered truths, and shape our conclusions thereby much nearer scientific completeness. Science is usually quite simple when understood, but seems very profound when contemplated from a mental distance.

Many of the Nature-facts of Medicine which we now know to be exceedingly important are but kindergarten lessons in the science. But Nature hides her work from human observation seemingly in total disregard of what we consider the value of the information, and only by the cleverest exercise of man's mental powers can a glimpse be had into her workshop, and her processes and methods be observed. Even then, how limited are the views, and how unsatisfactory and full of error are our conclusions.

In Medicine what one man sees as a sublime truth, another with perhaps a little more light discovers to be an unimportant incident to a great truth.

Cause is often assumed when in fact what is observed is but remote effects. A minute and very restricted glimpse of a Nature-truth frequently puffs up the ego of the fortunate observer, and he announces to the world a great discovery; but the big diamonds of knowledge are exceedingly rare.

Our first actual fact in the science of Medicine is the universal tendency of living matter to revert to a normal condition under the influence of inherent power. The sick possess within their ailing bodies strong remedial forces calculated to restore them to good health. It is a battle royal between disintegration and progressive growth, and sometimes the forces are so evenly balanced that our insight of what is actually going on, which is nothing but the science of Medicine, enables us to render timely aid to the side of progressive growth, and thus turn the tide of battle toward recovery of the normal.

This is the true and only function of the physician. He cures nothing, he is not master of the situation, he is not responsible for anything but his duty well done. He is usually an unimportant factor, trying to honestly aid Nature when she does not really need his well-meant but superfluous activity. If he presumes to take command in the affray, and relegate Nature to the rear, disaster is the almost inevitable result.

If he aspires to be a wise but humble assistant, the small amount of scientific knowledge which he has laboriously acquired sometimes enables him to render God-like service.

Scientific Medicine is not acquainted with financial matters, nor able to measure values with a money standard. Her sphere is of earth but heavenly; her objects beyond the ken of man.

Medical art is but the work of a medical expert, ideal in theory, but often stained with deception and perverted by selfish lust.

It is largely shaped and moulded by the greed for gold, and its possibilities for fraudulently winning wealth attract the cleverest scoundrels that remain unhung.

The tradesman in the race for gold
May filch your purse, your land, your home;—
Not much the loss.
The cleric fraud may live two lives,
And never have his misdeeds told;—
He pays the debt.
Aye, some one's mother may be low,
And some one's sister fall from grace;—
Such things we bear.
But when a doctor is untrue,
Some stricken soul will sorrow know,
Beyond relief.

A. D. HARD, M. D.

Marshall, Minn.

STOMACH LAVAGE CONTRAINDICATED.

Hammer says that lavages and introduction of the tube are contraindicated:

1. In all constitutional and local conditions which may be aggravated or life endangered by the irritation and exertion of lavage: (a) Pregnancy. (b) Heart disease with a state of defective compensation—heart neuroses, angina pectoris, myocarditis, and fatty heart in an advanced stage. (c) Aneurism of the large arteries. (d) Recent hemorrhages of all kinds, including apoplexies, pulmonary, renal, vesical, gastric, rectal, and hemorrhagic infarctions. (e) Advanced pulmonary tuberculosis. (f) Advanced pulmonary emphysema with bronchitis. (g) Cerebral hemorrhage. (h) Advanced cachexia. (i) Presence of continued or remittent fever.

2. The stomach and intestinal diseases which are contraindications for the use of the tube are: (a) Ulcer, with recurrent hematemesis and evidence of blood in the stools. (b) Palpable carcinoma of the pylorus, with vomiting coffee-ground material, and the classical symptoms of cancer. (c) Stomach and intestinal troubles with acute fever. (d) Hypersensitive gastric mucosa easily started to bleeding. (e) Secondary gastric affections whose dependence upon a distinct and more important primary disease is evident.

THERAPEUTIC BRIEFS.

Smokers' Heort.—

Adonidini Merck.....grn. iiss
Ammonii Carbon.....grn. xlv
Camphoræ .....grn. xv

M. Div. in pulv. (in capsul. gelat.) no xxx.

Sig.: One three times daily.

Nevus.—

Sodii Ethylatis Merck.....grn. x
Alcoholis Absoluti.....fl. 3ii

M. Sig.: Apply with a glass rod, and cover with collodion.

Chromii Trioxidi.....grn. c
Aquæ .....fl. 3i

Sig.: Apply locally.

Cataract.—

Iodide of potassium.....1 dr.
Chloride of calcium.....1 dr.
Water .....14 oz.

To be used as an eye bath half an hour each day. By this treatment eight out of ten cataracts will regress and one will be cured.

Boils and Carbuncles.—

Acidi Carbolici.....gt. xx
Glycerini 3j
Aquæ Dest.....3ij

M. Make a crucial incision 1/8th to 1/4th and inject toward the periphery in various directions, using a few drops. Paint collodion from extreme circle of inflammation leaving opening 1/4th inch. Dress with antiseptic cerate. One to three injections cures without further pain within 3 to 5 days.

Septicemia: Pyemia.—

Bromini 3ij
Potassii Bromidi (vel. Iodidi).....3ij
Aquæ Dest.....Oj

Not to be inhaled. Keep in a glass-stoppered bottle. Apply to point of infections as cautery. Keep inflamed region swathed with weak solution night and day of various strengths ranging from 3ss to Oj to Oij. Same quantity of sodium bicarbonate added will be found cooling and advantageous.

Subinvolution.—

W. H. Neel, Jr., of Anson, Kan., recommends the following in cases of subinvolution:

Acidi Phosphorici Dil.....
Tinct. Ferri Chloridi.....aa 3j
Liquor Strychninæ.....3ij
Aquæ Menth. Pip.....
Syr. Simplicis.....aa 3iss

M. Sig.: Teaspoonful after eating.

Ozaena.—

The following powder is recommended by Larynx for insufflation in the treatment of certain conditions in ozæna:

Menthol .....gr. viiss
Ammonium chloride.....dr. ss
Boric acid.....dr. ii
Pulverized talcum.....dr. iiss
Iodine .....gr. iss

M. ft. pulv.

Acne Atrophica.—

Charles Forquet, in *La Clinique,* recommends after spraying with hot water, to apply an ointment of salicylic acid of the following composition:

Precipitated sulphur.....gr. lxxv
Salicylic acid.....Zx
Petrolatum .....Zx

M. ft. unguent.

Bronchial Grip.—

S. S. Porter, of Marietta, Ohio, reports great success in the treatment of bronchial grip with beechwood creosote.

Creosoti Fagi.....3j
Syrupi Simplicis.....3iv

M. Sig.: Shake well and take one teaspoonful four or five times a day in third of a glass of water.

Barbers' Inch.—

The following prescription is highly recommended by M. O. Terry, of Mamaroneck-on-the-Sound, N. Y., in their respective indications:

Acidi Sulphurosi.....3ss
Glycerini 3j
Aquæ Rosae.....qs. ad 3xij

M. Sig.: For external use. Apply as often as necessary.

BOOK REVIEWS.

STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepp, M. D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Second Edition Revised. Octavo volume of 715 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $4.00 net; half morocco, $5.50 net.

We fear we can not conscientiously say much in favor of this rather voluminous book. The only possible legitimate use we can see in such a compilation of State Board questions is to give the intending candidate an idea of the range of subject-matter covered in the examinations; and this purpose could be just as well carried out by requesting of the State Secretary a few sample copies of last year's examination papers, the answers being wholly unnecessary. The real aim of the book is, of course, to enable the student to "cram" for examination; and this is, to our mind, a pernicious object, which we can not commend. However, we are not so fatuous as to imagine that our opinion will carry much weight with those for whom the book is intended. There will doubtless be found plenty of buyers who desire the volume for just that purpose.

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WHAT TO EAT AND WHY. By G. Carroll Smith, M. D., of Boston, Mass. Octavo of 310 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $2.50 net.

The author of this book disclaims any intent of covering the whole subject of dietetics or of discussing all the affections which are benefited by a regulation of diet. He further admits that very little is said about the chemistry of foods. His aim has been to place before the medical student and practitioner the fundamental elements of foods and the principles underlying its use, the essential reasons why change of diet in certain diseases is desirable, and how this change may be made in the most practical, time-saving way. A careful study has been made of the rational history of the cases considered, especially with reference to the kinds of food taken in the past, as well as the diseases heretofore suffered from, which may have laid the foundations of the present trouble. In short, the purpose of the book is to simplify dietetic therapy and to stimulate the busy practitioner to utilize a dietetic therapy as readily and intelligently as he does an electro-therapy, a hydro-therapy, or a drug therapy. And this purpose is admirably carried out in the subject-matter and arrangement of the volume.

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DIFFERENTIAL DIAGNOSIS. Presented through an analysis of 383 cases. By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School. Octavo of 753 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50 net.

Dr. Cabot is, as every medical man knows, one of the ablest and most conscientious diagnosticians in modern medicine. He is both a student and a man of wide personal experience. In this book are gathered together and classified all the data derived from both his knowledge of case records and his own extensive work, and applied to the practical clinical side of differential diagnosis. The result is a most helpful, instructive manual on the subject, in concise, ready-to-use form, which every practicing physician will find an invaluable addition to his diagnostic armamentarium. We are specially gratified to find that the author has paid so much attention to subjective symptomatology, from which the general practitioner is obliged to draw so many of his diagnostic conclusions. Pain, for example, is a large factor in Dr. Cabot's diagnostic

data—as it should be. It is the eminently practical work of an eminently scientific man.

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HOSPITAL MANAGEMENT. A Hand-book for Hospital Trustees, Superintendents, Training School Principals, Physicians, and all who are actively engaged in promoting hospital work. By Charlotte A. Aikens, author of "Hospital Training-School Methods and the Head Nurse;" "Primary Studies for Nurses;" "Clinical Studies for Nurses." 12mo of 488 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $3.00 net.

Not long ago we expressed ourselves editorially on the subject of hospital management in this country, deploring the utter lack of the veriest elements of business sense and policy in the conduct of even the best of our private and public hospitals. Here is a text-book treating fully of every aspect of hospital management, from the kitchen to the Board of Trustees' office, from dietary to financing, and we cordially commend it to the thoughtful attention of all who are in any way concerned in the conduct of institutions for the sick. Each section in the book is contributed by a writer of experience and authority in his or her particular branch, and each subject is dealt with in a plain, straightforward, practical, constructive fashion, such as to make it rich in suggestion and help to every executive department of hospital work.

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GOLDEN RULES OF PEDIATRICS. By John Zahorsky, Clinical Professor of Pediatrics, Medical Department, Washington University. With an introduction by E. W. Saunders, M. D., Emeritus Professor of Diseases of Children, Washington University. London: George Keener & Co. 1911. Pages, 284. Price, $2.00.

The series of sententious and axiomatic aphorisms which constitute the contents of this little book are not in the nature of aids and breviaries for the student in his preparation for examinations, as so many books of this character are, but for the practitioner, enabling him to crystallize and epitomize the knowledge that he has acquired in the course of his experience—and some that he has not acquired. The arrangement is good, facilitating reference at a moment's notice. One does not find one's self in entire agreement with every statement made by the author; but disagreement is on minor points only. For the most part the book is trustworthy and accurate. The psychological element has received a fair share of treatment. All of these paragraphs which relate to the subject of infant feeding and the relations between mother and child are characterized by a rare display of good sense which is unfortunately often absent from medical books treating of these matters.

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AMERICAN PRACTICE OF SURGERY. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editor: Joseph D. Bryant, M. D., LL. D., and Albert H. Buck, M. D., of New York City. Complete in eight volumes. Profusely illustrated. Volume VIII. William Wood & Co., New York City.

The present volume is the last of a series which represent a very creditable and successful attempt to put into book form the modern status of the science and art of surgery. This last volume deals, for the most part, with genito-urinary and gynecological surgery. The contribution by James Bell, of Montreal, on the Kidneys and Ureters is a masterly one. If we were not reluctant to discriminate, we should be disposed to pick it out as the *piece de resistance* of the volume—let it go as our selection. A posthumous interest attaches to the section on the Urinary Bladder and the Prostate, by the late Alexander Hugh Ferguson, of Chicago, who recently passed away. In addition to the above-mentioned subjects, the book contains

sections on the legal aspects of surgery, administrative surgical work, hospital management from the surgical side, and military and naval surgery, concluding with an appendix by Sweet, of Philadelphia, on the Relation of Blood Pressure to Surgery. Altogether, it is a fitting close to a very commendable work, and the editors are to be congratulated, both upon being through with so onerous a task, and also upon having accomplished it so well.

THE HEALER. By Robert Herrick, author of "The Web of Life," "Together," etc. New York: Macmillan Co. Cloth, $1.35 net.

This is the latest of Herrick's novels, and deals with the twofold problem of medicine and marriage. The hero is an idealistic sort of fellow who has become soured on the commercialism which he believes pervades the practice of medicine, taken to morphine, and finally withdrawn himself into the solitudes of the mountains to wrestle with both his opium habit and his sour conscience. There he meets (as a patient) a sensuous girl, whom he marries, and who drags him back into civilization and materialism, and makes of him a successful fashionable physician, the head of a popular sanitarium. In his disgust at his own prostitution he relapses into the morphine habit. At the psychological moment the "other woman" comes along, strikes up an affinity with him, and the two go off together into the woods for a sort of "three weeks" debauch of affinity love, after which they separate. The two lessons which Herrick appears to purvey are, first, that the practice of medicine, as it prevails in civilized communities, is merely a money-making game, and second, that when a married pair find themselves uncongenially mated, each is at liberty to "complete his or her life" by slipping away with an affinity for a few weeks. We can not say that either lesson appeals to us as particularly inspiring —not even novel. And the book loses a good deal of force by its palpable repetition of the conditions and doctrines of the writer's former novel "Together."

EPISTAXIS IN CHILDREN.

Le Grand Kerr, in the *American Journal of Obstetrics,* says the causes of epistaxis are quite numerous, and may be divided into those which are general and those which are local.

General Causes—All conditions which favor congestion may influence the occurrence of epistaxis. Then there are various blood conditions which favor it, as hemophilia, purpura, scurvy, anemia, chlorosis, leukemia, syphilis and rheumatism.

In an otherwise healthy child, if epistaxis repeatedly occurs and the cause is undiscoverable, the strong probability is that it is dependent upon rheumatism. Very commonly a carefully taken history will reveal the fact that the child has been the subject of indefinite pain which has not been severe enough to attract attention. An examination of the urine will at once reveal its turbidity and the presence of abundant uric acid salts. The further examination may reveal some chronic cardiac disease which has escaped attention up to this time.

Epistaxis may occur as an accompaniment of many acute diseases, and especially those of an infectious nature, but in this connection it has no special significance. During the course of nasal diphtheria it is usually of late occurrence, but, late as it may be, it is frequently the first symptom to attract attention to the situation of the membrane in the nose.

It is not uncommon for epistaxis to occur in cardiac disease, and especially under those conditions in which there is increased arterial tension or a hindered return flow of the blood. If the bleeding occurs immediately after a severe coughing spell, it is strongly indicative of pertussis.

NOTES AND MISCELLANY.

THE POST-TYPHOID TONIC.

IT is usually at this season of the year that typhoid fever exhibits its maximum incidence, especially in the larger cities. One probable reason for this is the return of the army of families to city homes from the many more or less unsanitary summer resorts in country districts during the stage of incubation, and the subsequent development of the characteristic symptoms of the disease. As every physician realizes, the systemic poisoning is usually profound and the duration of the infection is such that the organism is almost always distinctly depreciated and devitalized after the four, five or six weeks febrile period. This condition of general systemic depression at the beginning of convalescence certainly indicates the necessity of reconstructive measures. As soon as it is safe to gradually increase the patient's dietary, it is also wise to commence tonic and hematinic treatment. Care must be taken, however, to avoid derangement of the digestion, and for this reason, Pepto-Mangan (Gude) is especially indicated as the most efficient, readily tolerable and generally efficient reconstructive and hematic. This organic combination of the peptonates of iron and manganese never creates aversion, destroys the appetite nor causes gastro-intestinal irritation. Through its regular use typhoid convalescence is promoted and distinctly hastened.

"HOW I DOUBLED MY CASH RECEIPTS IN THREE YEARS."

Under the above heading Dr. S. T. Yount, 32 N. State St., Chicago, Ill., has the following to say in a recent issue of *Successful Medicine:*

For years it has been my luck to have had many cases of impotency. Although I have studied under the best specialists in the United States and Europe, and my office is equipped with the best apparatus for treating such cases, I confess that prior to 1907 I had more failures than successes. What was specially annoying was the fact that many patients of large means and willing to pay almost any price were those that I most frequently failed to benefit.

Since 1907, however, by means of Bier's Erectruss, I have relieved or cured over 90% of these cases. This instrument, manufactured by Huston Brothers Company, 30 E. Randolph Street, Chicago, when first called to my attention was supposed to "cure almost any case." and I was skeptical. However, I was willing to try it on a typical case that happened to be on hand, and I was most agreeably surprised at the result. The patient, a strong, healthy man of forty-two, was connected with a large corporation and received a salary of $30,000 a year. He offered to pay almost any price for a cure, but told me frankly that he had been treated for two years in Chicago, New York and Paris with practically no improvement. He had no faith in what I said, but a drowning man will grasp at a straw, and he consented to give me a trial.

By means of the faithful use of this instrument, Bier's Erectruss, every night and morning, a very decided improvement was soon shown. In forty-five days he said that according to his own experiences he considered himself well. For this case I was paid a very large fee. This gentleman spread the news among his intimate friends, who passed it on, like an endless chain. Suffice to say that I have since prescribed more than two hundred appliances and my cash receipts have doubled in three years. My records show that at least

90% were relieved or cured. A large per cent of the cases have been under fifty years old, while men of sixty to seventy-five, and completely impotent from two to ten years, have frequently been cured.

In many cases where the organ of generation is abnormally small I have used the Erectruss with the best success, and have reaped a rich reward in cash for the services rendered. As this device is strictly ethical and is sold only to the profession, I do not see why physicians everywhere should not be able to do as I have done. One thing is sure—the man you relieve or cure of impotency will send you other cases, as there seems to be a sort of fellowship among those needing such treatment.

WORDS OF APPRECIATION.

The following letter, relating to the treatment of opium and other addictions, will interest many. It is addressed to our old friend, The Antikamnia Chemical Company, and reads:

"Gentlemen—Illness, dating from the very day of my former letter, must be my plea for my silence and my seeming indifference to your courtesy and your exceptional kindness in sending me your little 'Vest Pocket Box.' I want you to feel that I sincerely appreciate your goodness in this little matter. I am in charge of The Woolley Sanatorium, Atlanta, Ga., an institution conducted exclusively for the cure of opium and other drug addictions, and am using Antikamnia Tablets extensively after withdrawing morphia, and I am free to say that I do, in reality, regard your product as 'A Succedaneum for Morphia.'

"Our institution is probably the largest of its kind in the South and if my views should prove of value to you at any time, command me."

MARION T. DAVIS, D. D.

ARMY MEDICAL CORPS EXAMINATION.

The Surgeon-General of the Army announces that preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on January 15, 1912, at points to be hereafter designated.

Full information concerning these examinations can be procured upon application to the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as an interne, after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant-General at least three weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There are at present sixty-four vacancies in the Medical Corps of the army.

SPECIAL WESTERN NUMBER.

In furthering the plan of producing special issues of the *American Journal of Surgery* composed of contributions by surgeons residing within a certain geographical area, yet of international reputation, there will be issued in the early part of 1912 a special Western number of this magazine.

Subjects and those to contribute:

"The Operation of Gastroenterostomy," by William J. Mayo, Rochester, Minn.

"The Surgery of Tendons," by John B. Murphy, Chicago, Ill.

"Operative Treatment for Graves' Disease," by George W. Crile, Cleveland, Ohio.

"Colonic Intoxication," by J. E. Binney, Kansas City, Mo.

"Practical Points in the Surgical Treatment of Exopthalmic Goitre," by A. J. Ochsner, Chicago, Ill.

"Treatment of Foreign Bodies in the Esophagus," by E. Fletcher Ingals, Chicago, Ill.

"Brain Surgery Technique," by J. Rilus Eastman, Indianapolis, Ind.

"Treatment of Abscesses and of the Necrotic Foci Resulting from the Use of Salvarsan," by A. Ravolgi, Cincinnati, Ohio.

"Treatment of Prostatic Obstructions," by E. O. Smith, Cincinnati, Ohio.

Subject not announced, by H. Tuholske, St. Louis, Mo.

"Artificial Tendons and Ligaments in the Surgical Treatment of Paralysis," by Nathaniel Allison, St. Louis, Mo.

"Uterine Cancer," by John C. Murphy, St. Louis, Mo.

"Arthritis Deformans," by Leonard W. Ely, Denver, Colo.

"Acute Angulation and Flexure of the Sigmoid, as a Causative Factor in Epilepsy, with Special Reference to Treatment," by W. H. Axtell, Bellingham, Wash.

The character of contributions prepared by these well-known surgeons are of such a nature as to make this number particularly interesting.

SEPTIC CONDITIONS.

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THE AVOIDANCE OF PNEUMONIA SEQUELAE.

The best means of avoiding pneumonia sequelæ lies in the administration of truly strengthening products, of which Cord. Ext. Ol. Morrhuae Comp. (Hagee) is a splendid example. Its employment insures a richer blood stream, charging the tissues with reconstructive elements that are lacking as a result of the serious inroads made by the primary disease. With this enhancement of bodily vigor, the index of resistance becomes higher and sequelæ are successfully combated.

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cations for its use than in the convalescence following acute lung and bronchial disorders.

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THE FUNDAMENTAL NEEDS OF THE BODY.

As the recent graduate in medicine enters upon his life work he very soon finds that certain fundamental needs of the body form the main indications for practically all medical treatment. Among these needs, the one which will appear most often is the necessity for restoring or reinforcing the vital forces of the organism. No matter what the disease may be, one of the most prominent as well as constant symptoms is inanition or debility. This is the essential result of the functional derangements which attend every pathologic process, and no complete or perfect recovery therefrom can be expected until the vitality has been materially increased, the various functions regulated and restored, and the physiologic balance of the whole body re-established.

The great problem for the conscientious physician is how to accomplish the foregoing in the shortest time and with the greatest surety of permanence. At the outset he will see that the body is trying to return to a state of health; that nature, however enfeebled and weakened, is doing her best to overcome the baneful forces of disease and restore normal conditions. With this so evident, what better course than to support and aid to the fullest nature's efforts toward recuperation?

Certainly no line of treatment is more prompt and positive in its effects, and if the clinicinal results are any criterion the ideal way of overcoming physical debility and inanition is to aid and reinforce the natural reconstructive and restorative forces.

This is distinctively the mission of the tonics, and the young physician who seeks a remedy of this class that will serve him faithfully and well should give Gray's Glycerine Tonic Comp. a careful trial. For over eighteen years this dependable tonic has been employed day in and day out by discriminating physicians, and the uniform results that they have been able to obtain speak conclusively of its therapeutic worth and reliability.

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PULMONARY AND STRUMOUS AFFECTIONS.

The usefulness of good hypophosphites in pulmonary and strumous affections is generally agreed upon by the profession. We commend to the notice of our readers their advertisement in this number. "Robinson's Hypophosphites" is an elegant and uniformly active preparation; the presence of quinine, strychnine, iron, etc., adding highly to the tonic value.

CHRONIC NASAL CATARRH.

By Geo. A. Hewitt, M. D., Philadelphia, Pa.

Case 1—A man, thirty-four years of age, had suffered for years, especially in cold or damp weather, from difficulty of breathing, accompanied by a thin discharge from the nose. At night he was obliged to sleep with his mouth open. He was prone to attacks of follicular tonsillitis. This man was appreciably benefited by a course of arsenic internally and the persistent local use of Glyco-Thymoline. In the course of a few weeks the situation was entirely changed. A sense of obstruction was then seldom present. The discharge had disappeared. He is now almost free from his old symptoms. Whenever there is any threatened recurrence he has immediate recourse to his bottle of Glyco-Thymoline.

Case 2—A woman, aged twenty-two years, had suffered for years from an aggravated case of hypertrophic rhinitis. Obstruction was marked, discharge was constant. At night she constantly breathed through her mouth. She was subject to sore throats and attacks of bronchitis. This patient was directed to take hypophosphites, malt and cod-liver oil, as she was of a distinctively strumous diathesis. Withal, however, she was possessed of considerable muscular strength, and aided by the local action of Glyco-Thymoline made a very satisfactory recovery.

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DR. CHARLES E. De M. SAJOUS, SUPERVISING EDITOR OF THE NEW YORK MEDICAL JOURNAL.

We have the honor to announce that, beginning with issue of December 9, 1911, Dr. Charles E. de M. Sajous, of Philadelphia, becomes the supervising editor of the *New York Medical Journal.* While Doctor Sajous will give up his private visiting practice, he will continue his work as a consulting physician, investigator, teacher, and author, and thus be in a position to keep in the closest touch with the needs of the medical profession.

Though born under the American flag. Doctor Sajous received his preliminary education in France. He studied medicine in Philadelphia, graduating with honors from the Jefferson Medical College in 1878. He served for two years as resident physician in the Howard Hospital, and in 1881 was appointed professor of anatomy and physiology in the Wagner Institute of Science, lecturer in the Philadelphia School of Anatomy, and clinical assistant in the laryngological department of Jefferson Medical College, succeeding Dr. J. Solis-Cohen, in 1883, as clinical lecturer and chief of that department. In 1891 Doctor Sajous went to Paris, where he devoted six years to original research. Upon his return, he was appointed Dean of the Medico-Chirurgical College. At the recent reorganization of the medical department of Temple University, Doctor Sajous accepted the chair of pharmacology and therapeutics, which he still holds.

The immediate outcome of Doctor Sajous's six years of research work in Paris was the publication of two volumes on *Internal Secretions and the Principles of Medicine,* a work which gave the author high standing as an original investigator.

Doctor Sajous has had a wide editorial experience, having founded in 1888 the *Annual of the Universal Medical Sciences,* which he conducted with the collaboration of some of the most eminent physicians in America and Europe, until the publication was abandoned in 1893. The *Annual* had a circulation of over 500,000 volumes, and the *Cyclopædia of Practical Medicine,* founded by Doctor Sajous in 1898, to succeed the *Annual,* and intended more particularly for the general practitioner, has attained a circulation of 240,000 volumes, the seventh edition being now in course of preparation.

The value of Doctor Sajous's services to medical science has been recognized in France by his being made a member of the Legion of Honor. While in Belgium he received the order of Leopold and was made a Knight Commander of the Liberator, besides receiving other titles, both governmental and scientific. In America Doctor Sajous has been president and vice-president of many societies and is a fellow of the College of Physicians of Philadelphia, and of the American Philosophical Society. He brings to bear on the editorial problems of the *New York Medical Journal* a brilliant and well-informed mind, wide experience, and a thorough knowledge of the needs of the American physician.

The publishers of the *New York Medical Journal* feel that they as well as its readers are to be congratulated upon having obtained the services of Doctor Sajous. Comprehensive and well directed plans have been formulated for enhancing the value and interest of the *New York Medical Journal,* and in carrying out these plans no pains or expense will be spared to give to our readers a medical journal of unprecedented authority and interest.

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PREVENTION OF NEPHRITIS.

In scarlet fever, diphtheria, typhoid and other infectious diseases, it is a commonplace of practice to watch the urine and to take every precaution against nephritis. The discovery of the peculiar property of the chemical combination, $C_6H_{12}N_4$, to give off formaldehyde and other obscure but effective antiseptic agents, at body temperature only, was one of the most epoch-making in the history of therapeutics. Cystogen, a refined preparation of the aforementioned chemical, has been extensively prescribed for more than fifteen years and has been preferred to other products by many physicians on account of its uniformity of action and non-irritating property. More recently, Cystogen-Lithia (cystogen, 3 grains, and lithium tartrate, 3 grains) in the form of an effervescent tablet has been given preference; one of these tablets dissolved in a glass of water, makes at once a proper dose and menstruum, to be taken at meal times or between meals, as the prescriber may direct.

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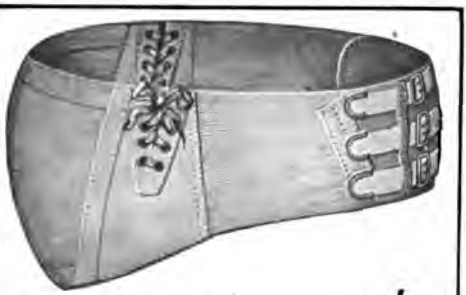

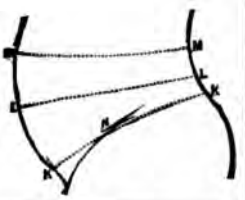

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A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., January, 1912. No. 2.

EDITORIALS.

DANGER IN ANESTHESIA.

EVERY little while we are treated, in various quarters, to disquisitions of various length and fervor upon the dangers attending the adminstration of anesthetics. We are told that chloroform is a highly dangerous agent; that ether is not much better; and even the old ACE mixture of the English anesthetist, which used to be regarded as so safe and adequate, has of late been discarded as undesirable and risky. It seems, in fact, that every day's experience and observation adds some new element of danger and undesirability to the various anesthetics and their combinations, until they teem with risks which were never suspected in former times.

Now it is quite right and proper, of course, that the dangers which lurk in anesthesia should be keenly scented out and frankly exposed. It is a good sign of the times. It shows that the subject is receiving careful study, and that the surgical profession is alive to the necessity for conserving the life and health of their unfortunate patients who are obliged to undergo the ordeal of the surgeon's knife. And there is no doubt that the greater part of the charges that are brought against both chloroform and ether from time to time are warranted by the facts. There are unquestionably many untoward results from their administration, other than the death of the patient on the table, which in the earlier days of anesthetics we did not suspect. And it is altogether a thing to congratulate ourselves upon, that we no longer administer these agents with the airy nonchalance that characterized our former attitude toward anesthesia.

Yet the fact remains that anesthesia has come to stay, and can not be reasoned out of necessity and general usage by arguments about its dangers, direct or remote. We simply can not do without it; and, indeed, its advantages and benefits, viewing it from the most pessimistic standpoint, have been so overwhelmingly in excess of its evils that nobody dreams of attempting to do without it. Moreover, so far as we are able to see, there does not thus far seem to be any serious prospect of supplanting chloroform and ether as the staple agents of anesthesia. With all their faults, which, as we have said, seem to multiply with the days, nobody has as yet had anything to offer which can take their place. Spinal anesthesia, from which so much was promised a few years ago, somehow or other does not seem to make good. And the other general anesthetics only serve as occasional substitutes in exceptional instances.

It seems likely, therefore, that we are destined to use these two agents in our anesthesia work for some time to come, and it would appear to be the part of wisdom to make the best of them. This being the case, it is a little strange that the only feature of the matter in which we can really accomplish a great

deal toward insuring safety and comfort in anesthesia is almost entirely neglected in American hospitals, namely, the personnel and training of the anesthetist. In spite of the growing appreciation of the importance and danger of this part of the surgical operation, the task of administering the anesthetic is still, in practically all the hospitals of this country, delegated to a comparatively inexperienced interne, who performs it for a few months at the outside, and then hands it over to his equally green successor.

In England and Europe there is scarcely a hospital of any importance that does not have its professional expert anesthetist, just as it has its staff surgeons and physicians—a man of age and skill and experience equal to that of the operating surgeon. The writer asked one of these experts on one occasion what, in his opinion, was the safest anesthetic. He replied that almost every anesthetist had his own preference, and that his was pure chloroform unless it was positively contraindicated, "but," he added, significantly, "I want to give it." There, in our judgment, is the crux of the whole situation—and there is the point which American writers and practitioners almost uniformly ignore. The current anesthetics, as we have said, have come to stay, as least for a time. It is beside the mark to dilate upon the inherent dangers of the drugs themselves. Their ultimate safety or danger lies in the personnel and training of the men who administer them; and their administration demands as great a degree of expertness as the surgery to which they are handmaids.

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REPORTING VENEREAL DISEASES.

WHY, we ask for the hundred thousandth time (we do not mean, of course, that we have personally put the question that number of times, but it is a moderate estimate of the frequency with which it has been raised in the minds and by the lips of physicians and hygienists), why do the State and municipal laws which very properly require the reporting of communicable diseases, weakly make an exception in the case of that commonest and worst type of communicable disorders, the venereal diseases? Why is the attending physician required to report a case of typhoid fever, or tuberculosis, or whooping cough—we mention those in which, under modern conditions, the chances of communication are reduced to a minimum by intelligent restriction and regulation—and utterly exempted from reporting a case of gonorrhea or syphilis, around which there are absolutely no safeguards thrown by either State or individual, and in which communication to some innocent party is almost inevitable?

We know the answer, of course. An ancient, bewhiskered answer. The sensibilities of the persons who contract venereal diseases; the fear that, if they knew themselves to be subject to report, they would conceal their condition, refuse to consult a physician for their cure, and thus become an even worse focus of contagion than under present lack of regulation; consideration for the moral (or immoral) element that plays such a part in the matter; these are, as they have always been, the stock arguments against compulsory reporting of venereal diseases.

They are, in our opinion, specious reasons every one, and will not hold water. They are, indeed, nothing but an extension of the very same objections which were formerly urged against the reporting of tuberculosis, but were beaten down by considerations of public policy. There is no good reason, in these days, why the sensibilities of the individual should prevail against the public health and safety. Tuberculous patients are sensitive, too. For many reasons—some of them

much more solid than mere personal squeamishness—why a person suffering from tuberculosis does not care to have it made public knowledge. But we recognize, and he recognizes, too, if he be a sensible man, that such considerations are outweighed by those of public weal, in which he and his are just as much interested as the rest of mankind. The same is true of gonorrhea and syphilis. And if it be objected that in these diseases there is an element of shame which does not pertain to tuberculosis—why, then we ask, in surprise, whether these same considerations of public health and safety, which override all other personal consideration, are to humbly respect and softly spare the blushes of a man who has done something he is ashamed of?

But the women and children who suffer innocently from venereal complaints. Shall we pillory them, too? We know that old argument also, and are too old birds to be caught by any such palpable chaff. If these victims of venereal disease are innocent, then, to be sure, no shame can attach to their sufferings, so that part of the argument falls to the ground, at least so far as they are personally concerned. And so far as the reflected disgrace is concerned—we would like to enquire whether the vote of the women and children was ever taken on the subject. Is it not, as a matter of fact, the men who urge this sentiment—hiding themselves behind the women's skirts?

As to such a regulation keeping the victims of venereal infection away from the physician, we take no stock in that objection. The man who contracts a venereal disease is not, as a rule, especially shy of having his condition known to anyone except to the very persons to whom he ought to make it known. On the contrary, compulsory reporting of the venereal diseases would put an end to a lot of the clandestine treatment by druggists and quacks which now prevails; and, what is better still, it would insure those victims receiving proper care who now, unfortunately, do not get it—the innocent women and children of whose sensibilities we are so tenderly considerate!

We fear that the real arguments against it are the men themselves. And since men make the laws, it is hardly likely that it will become popular. Perhaps some day the women will take a hand, and then we shall see. Suffragettes, please take notice.

THE IDEAL OF AN ASSOCIATION ORGAN.

THE new *Journal of the American Pharmaceutical Association,* under the editorship of Mr. J. H. Beal, is before us. In his opening preachment the new editor outlines the policies and scope of the Journal, frankly explaining that it has been brought into existence to serve the necessities of the Association, that it will be satisfied to remain the official organ of the Association and that the first and last test to be applied to its policies and utterances will be the ability to serve the welfare of the Association and the cause for which it labors.

It frankly disclaims any intention of posing as a general pharmaceutical journal or of competing with the independent pharmaceutical press. "Beyond the extent necessary to adequately discharge its mission as the official organ of the Association," it declares "the Journal will not attempt to enter the field served by the general pharmaceutical press." In conformance with which policy it declares that it will make no active canvass for subscriptions outside of the membership, except upon the basis of promoting membership in the Association.

Its advertising policy is equally direct and conservative. It will accept advertising but will not actively canvass for it. "In its advertising policy," says the

editor, "the Journal will be as independent as a government publication, or even more so, if common report be not a libel monger; and no firm will be big enough or rich enough to warp its editorial utterances, or buy space for the advertisement of any substance of service considered to be out of harmony with the expressed or plainly implied professions of the Association. The five formal rules of censorship to be found on another page are printed upon the face of every contract, and should this pentalogue be infringed upon it will be due to the defective knowledge or judgment of the person whose duty it is to decide upon admissions and exclusions rather than to conscious evil intent."

However, this new journalistic organ does not regard itself as the appointed keeper of other people's consciences. It has no intention of establishing a censorship of the pharmaceutical press of the country. Says the editor:

"While the journal will not knowingly accept advertisements not in accordance with the ethical professions of the Association, it will not undertake to run amuck with every individual or interest with which it does not agree. When duty seems to require it, the Journal will not hesitate to discuss such topics with candor and directness, but, it is hoped, always temperately and with fairness. In defining its stand upon moral and ethical questions, the Journal will not lack aggressiveness, but it will especially aim to be aggressive in minding its own business.

"Any close observer will soon discover that the publication which makes the loudest profession of ethical cleanness is not necessarily the most nearly aseptic. Over-noisy declarations of holiness, like the smell of chlorinated lime in a closet, usually indicates the presence of something that needs disinfection, and no advertising solicitor has ever earned such commissions as has the club of the condemnatory editorial."

The new Journal further announces its intention of furnishing a free and open forum for the discussion of all matters touching the interests of the cause which it serves—a clear stage with no fear or favor. The editor undertakes that he will "as readily print the views of those who do not agree with him, as of those who do, provided they are in other respects of sufficient merit to warrant the use of the space required, and are free from offensive personalities."

Altogether, the manifesto of the new Journal and its editor is about the most dignified and praiseworthy conception of the function and policies of an official organ that we ever remember to have seen; and, if carried out, argues well for the truest success of the undertaking. We can not help contrasting it with the officious, arrogant, meddlesome character of so many journals—and particularly of one well-known journal—purporting to represent organized medicine. Indeed, we can hardly escape the belief that the editor of the new periodical must have had these instances in mind when he penned some of the caustic reflections we have quoted. And we heartily commend to our friends of the organized medical press—and especially our distinguished contemporary who heads that class—the sane and dignified position of the editor of the *Journal of the American Pharmaceutical Association*. Not that we really expect any of them to profit by the example. Ephraim is joined to his idols. But we point the lesson nevertheless.

The Needs of Our Movement for the Realization of its Aims.*

By A. Emil Schmitt, M. D.,

President N. A. S. E. E. C.; Instructor in Operative Surgery Columbia University; Attending Surgeon German Hospital, O. P. D.; Medical Advisor Ethical Culture School, etc.

OF all the subjects for national conservation, we are all agreed upon the importance of conserving the life and health of the child, upon whom the future of the nation depends. We heartily agree with the author that the men and women engaged in this work of which the association here represented is the organized agency—are an earnest, disinterested, self-sacrificing band of citizens, conscientiously seeking the best means of accomplishing their high aims. And we urge upon our readers their high duty to co-operate with them in their arduous task. Whether members of the Association or not, we can all do our share toward bringing about the great purposes in view; and this interesting and suggestive paper will enlighten us as to the real needs of the situation and help us to intelligently co-operate in meeting them.

AS president of this association I extend to the ladies and gentlemen assembled for this second conference on the study and education of the exceptional child a most hearty welcome. Welcome to the educators who have come from far and near to give us the benefit of their experience and to listen to the advice of their confrères, and, in turn, receive new inspiration for their future labors; to the physicians who more and more are realizing that it is also their problem, after attending the birth of a child and advising its mother as to its proper rearing, and meeting the problem of its physical defects as they may arise at various stages of its growth, to begin to interest themselves in the peculiarities of the mental growth and to extend their powers of observation toward other children of the family with whom they may come in contact, and thus seek light on this phase of their patients' development to the extent heretofore given the physical side.

It is the great body of general practitioners whose interest we wish to arouse in this important subject to clarify, with their broad understanding, the over-accentuation given from the specialist's standpoint, be he interested in the eyes, the nose and throat, in speech defects, in dental conditions, deformities, in nervous and mental disturbances, in stomach and bowel diseases, in the disorders of the reproductive organs, or in disturbances of the internal secretions or what not. It should constantly be borne in mind that if every physical defect has been successfully removed the mental unbalance or deficiency can persist unaltered, inasmuch as it was primarily a mental defect and can be reached only by methods of education or psychologic treatment.

Welcome to the teachers who are having the problem of the exceptional child forced upon them in their routine classwork and in their special classes, and who are groping in the realm of pioneer experiences and yearning for light and assistance in the problem which confronts them. It daily becomes more apparent that the exceptional child should not only receive individual attention, but that the teacher who instructs him should be thoroughly fitted temperamentally and specially trained to be of any value. I

*Read before the Second Annual Conference of the National Association for the Study and Education of Exceptional Children, New York, December 1, 1911.

should suggest that the principals of our schools, both public and private, should judge the efficiency of these teachers by the results obtained in their pupils rather than arbitrarily to assign them to these special duties. If pupils are required to repeat their grades more than a second or third time it would be wise to raise the question whether the methods employed by the teacher are not at fault, rather than to judge the child purely by its defects. That special training of such teachers is a first desideratum and that methods used in regular classroom instruction are entirely inadequate is beyond question.

Greetings to the fathers, mothers, guardians or friends who are facing the problem of the exceptional child in their homes; to the intelligent many who feel that the child entrusted to their care is laboring under a disadvantage which might be overcome, not by criticism and punishment, but with intelligent assistance and guidance and with a spirit of infinite patience and compassion, with no idea of return in gratitude or appreciation other than in the thought that help was given where needed and a soul was lifted from mediocrity or an existence of degradation to one of normal working or even of brilliance.

I might here give a word of encouragement to those parents and interested friends of mentally afflicted children in the thought that if a child appears dull and backward in childhood he may, with favorable conditions prevailing, blossom into a most worthy and useful member of society in later life, as is evidenced in so many of the great benefactors of mankind, be it in the realm of art, science or philosophy, who were known to be dullards or of mediocre capacity in early childhood. If nature is given anything approximating favorable conditions her invariable tendency is to remedy physical ailments. This has been proven time and again, and as example I might mention one condition of which the general public has of late years gained a more intimate knowledge, namely, tuberculosis. Innumerable autopsies have demonstrated the fact that scarred lung tissue resulting from a previous tubercular infection, possibly dating back many years, had a favorable termination and left the body wholly sound, merely because favorable conditions were presented for nature to assert herself and to rectify the injurious effects which under unfavorable conditions might have led to disaster. So also with the mind, conditions approximating the normal are afforded, a partially unbalanced mind can be returned to the normal and regain its equipoise and nature will thereafter assist along wholesome lines.

At various stages of growth of the human physique we are constantly surprised with the rapidity of development of certain parts of the organism which remained dormant over a longer or shorter period. Thus we can take comfort in the thought that desirable characteristics which at one time apparently are absent, if given a chance and nurtured, may eventually develop at a later period, as in the case of bodily growth, instead of, as in the other case, becoming neglected and lagging behind. We can follow this thought one step further and conclude that very intensive thought in our young, conducted along wholesome lines, will develop desirable characteristics as does the frequent functioning of a part of the organism result in its rapid growth. We should encourage intensive thought and concentration in our children in those qualities, by us considered desirable, to raise them to higher standards and greater intelligence.

Welcome to our great American press, whose assistance we need in spreading information to all these groups of interested persons, and who will assist the association to present its case to the body of benefactors, who are willing to aid in the cause which is exerting its efforts in relieving palpable conditions surrounding us on all sides, and which readily can be detected in the defects of our young

in the home and in our schools, and, being recognized, deserve the best attention and remedies known to us for guiding to better manhood and womanhood those who, if neglected, make up the bulk of our incompetents, incorrigibles, agitators, inmates of our almshouses, of our houses of correction, penal institutions, house of prostitution, degenerates, in other words, the stratum of the under world.

Our association is an organized agency for gathering, assimilating and spreading the acquired knowledge of this great subject of the exceptional child. It should be the clearing house of all the agencies which have the interest of the child at heart, of the educators, the teachers, the probation officers, the staff of juvenile courts, of charitable organizations, of social workers, of physicians, of the press and the public at large, who seek light on this advanced subject and who in turn will give us the benefit of their practical experience. The association has as its guiding spirit Dr. Groszmann, who is a pioneer in the thought of the exceptional child and whose writing should be read to receive a clear concept of the subject. After a long experience in the education of children in regular day school (Ethical Culture School of New York) he has, for the past eleven years, given his continued thought in this new direction and has developed methods of instruction based on a new viewpoint—that of hidden potentialities in the backward, the overbright and the defective child. Through his effort an institute has been established (Herbart Hall, the experimental school of the association) for children who have not the advantage of special training in public or private schools, or of the trained tutor or nurse in the home, and who can receive the advantages of his teachings in this school. If the parent or guardian recognizes that the personal environment of the home is not a proper one for improving the child's condition, the institute forms the proper domicile and is often the only solution for effecting a desirable result. It should be borne in mind that a residence of years is sometimes required to bring about a desired change, as the brain must be given time to develop along the paths which have been smoothed for it, and that this is more necessary for its mental development than its physical or anatomical.

To sum up the entire question it is the infinite amount of patience and constant endeavor of the gifted teacher which eventually will bring about desired results, whether undertaken in the home, in the school or in special institutions.

At Herbart Hall individual attention is given each pupil and the training and education is adapted to individual needs. Herbart Hall is a large building, containing the school rooms, gymnasium, workshops, dormitories and dining hall for the atypical children. There is a visit once a week of the school physician, who makes a thorough examination of each child when it enters the institute, suggests and carries out the correction of physical defects found, and gives attention to all acute and chronic conditions during the residence of the pupil. Consultations with specialists in the various branches of medicine also become necessary, and they are either consulted at their offices or at the institute, as the case may require. Very complete histories are taken of the physical and mental condition, especial consideration being given to factors of heredity, early childhood, past physical and mental conditions and all extraordinary traits noted before entrance to the institute.

The clinic, which is still a part of the larger building, serves for observation purposes of the borderland cases which, with the regular methods of examination, can not be placed immediately or definitely into the group to which they finally belong. Such cases, when given a chance to develop in an environment different from the one they have been living in, and with all physical defects eliminated as far as possible, can by

close observation and study eventually be classed as true defectives mentally or grouped with the purely atypical.

A pedagogic laboratory has been established in another building nearby with an equipment for making the tests as laid down for a thorough psychological examination. Here, too, is contained the beginning of a comprehensive reference library on all subjects bearing on the exceptional child, and is a very essential and helpful requirement.

A comprehensive index system has been established, giving references to all monographs, articles, periodicals and books bearing in any way, shape or form on the status of the child.

There are several cottages which serve as residences for the governing staff.

The association grounds are situated high up on a hill to the north of the city of Plainfield, New Jersey, commanding a beautiful view of the hills and surrounding country. This affords a large area for outdoor sports and other forms of recreation, with all the advantages that that entails for children in this condition.

The association desires to be of assistance to the great body of teachers and physicians throughout our country, as well as to the general public who are gradually awakening to the importance of this vital topic. The labor entailed in gathering statistics and information and distributing this knowledge is considerable, and requires, besides a trained clerical staff, a large equipment of index cards and files. For all this funds are required.

But a short time ago the newspapers reported that a large foundation was established for the purpose of investigating the great theoretical subject of eugenics, which is bound to remain to a great degree purely theoretical, but which undoubtedly will essentially enforce reform in the selection of mates, especially from the physical standpoint. After considerable publicity and enlightenment, public opinion will undoubtedly force the raising of its standards in selection. But our association is dealing with something absolutely palpable, something which now exists which we can put our hands on, and should demand recognition amongst our great philanthropists in order to relieve the situation of meager support which it hitherto has received.

There is a library which needs a great extension before it contains everything in the form of books, periodicals, etc., bearing on the welfare of the child, and for this purpose a substantial fund should be donated, as has been done for so many movements where a great public need was to be satisfied.

The buildings which now exist should be considerably improved and much enlarged. New buildings ought to be erected to separate dormitories from school, school and observation clinic and pedagogical laboratory from library. Adequate quarters for the governing and teaching staff, and special quarters for teachers of ungraded classes who are to be trained in special and most advanced methods for accomplishing the objects for which this society stands. Owing to the highly specialized work and the close individual attention required by each pupil, the present teaching staff is entirely inadequate because of the lack of funds. As Professor Jacoby has frequently brought forth during his lectures on hospital management, instead of twenty children to but one nurse there should be twenty nurses for one sick child, so in the institutional management of atypical and defective children there should be, instead of one instructor for a group of children, rather several instructors for each child.

In conclusion, I must state that the work of our association is thoroughly organized, its ideals are high and the outlook for correlated activities and the spread along wholesome lines is well understood, but the one necessity for realizing all its aims, the one great want, the crying need to carry them all into effect, is the necessity for sufficient funds.

The Relation of Exceptional Physical Conditions to Exceptional Mental Conditions.*

By John J. Cronin, M. D.

Borough Chief, Department of Child Hygiene. Health Department, New York City.

WE hear a great deal in these days about the "exceptional child," his needs, and the best methods of studying and dealing with him. Indeed we have come to realize that children can not be dealt with, either physically or mentally, to any effective purpose, on any other basis than that of individuality. For all generic, racial purposes, the processes of nature suffice. When artificial human interference begins, the child must be specialized as an individual. It is the part of the author of this paper to point out the relations of cause and effect between exceptional children and exceptional environments—a phase of the subject not sufficiently considered—and we earnestly invite our readers' careful attention to the promises he offers and the conclusions he draws. One can not have too much light on so wide and important a matter.

TO MOST of us who keep in touch with the work being done in the interest of the exceptional child, it must appear that the most divergent and untenable conclusions are drawn by the various persons who write on the subject. Probably the most digressing effect of such irrational conclusions, is the intolerance of other points of view, insinuated rather than stated, by the present writer with those of his co-laborers.

In the special line of research in which the present writer is engaged, inconclusive conclusions are harmoniously drawn in favor of the speciality, and at times results are stated in a most dogmatic fashion. It must also be noted that the reports on cases are always about those which result successfully, and oftentimes the report shows that the total number of cases studied, and to whom corrective efforts have been applied, is from thirty to fifty per cent greater than the total number of successes. The conclusions are, nevertheless, made, and no analysis is evident of the cases resulting successfully.

By this omission, more strikingly than by any other fact, it is evident that enthusiasm and bias forms too important a factor. The study of this subject is too extensive to be comprehended by any specialism or combination of specialisms, except the sum total of all specialisms. It has long been a serious consideration with me how this difficulty might be overcome. I know personally many of the persons who are engaged in this work, and a more generous self-sacrificing, humanitarian aggregation could not be conceived of. There is nothing in the work for them, save a high-minded altruistic motive to live and work for the future benefit of human beings who are not as fortunately fitted for life as they would have them. There is nothing so emblematic of true Americanism, as the labors of this coterie who so unselfishly exemplify the spirit of "all for one, and one for all." Yet the dogmatic conclusions are drawn and presented for acceptance.

Medicine is not the only profession to suffer from this lack of comprehension of the whole; religion, which is

*Read before the Second Annual Conference of the National Association for the Study and Education of Exceptional Children, N. Y., December 1, 1911.

based on definite articles of creed contained within the inspired book, has many more divergent conclusions than are promulgated with regard to the exceptional child.

The whole scientific world owes a debt of gratitude to the founder of Watchung Crest School for exceptional children, Dr. M. P. E. Groszmann, Pd. S., as the one who most efficiently recognized this defect and made possible the remedy. As far as I am concerned, he has most definitely stated a clear, concise, definite classification of the exceptional child, which constitutes a sound basis and fundamental proposition, by which it is possible to study not some but all exceptional children. Agreeing to these propositions as stated, the absurdity of conclusions which deal with only one phase of exceptional children, is most evident.

Those who are mentally incompetent to study any phase of this work, must realize that whether definitely perceived or not, the alleviation of any single kind of physical handicap is merely the first step in the successful result obtained, and that many other factors are operative, and must obtain before a modicum of success is attained.

While I am not in any way competent to analyze and report on mental condition and its varying mysteries, except in so far as physical abnormalities interfere with the possibility of cellular activity in certain cells of the cerebrum, nevertheless, I feel that if even this much is really comprehended, some of the difficulties of the present bewildering literature will be in a fairer way for a desirable solution.

The whole process of life resolves itself into a delicacy and responsiveness of the body to ethereal vibrations, and inasmuch as all parts of the body, or condenser, are in perfect order, by so much are we able to expect a perfect message. The whole body is nothing more or less than a Marconi condenser and by so much as any of the faculties for the receipt and transmission of impressions are defective, by so much will the child fail to obtain a clear concept of physical or psychical impressions.

When the study of the physical condition of school children was undertaken by the Department of Health of the city of New York, as far as was within its power and ability, the study of the children was extended to the whole physical child. No attempt was made to study the environment of the child at school, or in the home. It was proposed to do just what we have been doing—detect hitherto undiscovered physical abnormalities, which might be a factor in the backwardness of the child.

Much misunderstanding, as a matter of course, followed, and many criticisms were hurled by those who were vainglorious enough to assume the prerogative of ability to criticise, but who never took the trouble to learn what was the object sought. It seems too bad that nature decrees that sound constructive work must be a slow sure process, while destructive processes are almost instantaneously effective. Iconoclasts are easily self satisfied. It was so in the first years of the department's work—citizens of all classes, and walks in life, who first decried this so-called species of paternalism are now the ones who complain because they can not reap some of the benefits of the system.

To illustrate how profoundly this class thinks: at the time that there was the greatest outcry against paternalism, they were oblivious to the fact that the most comprehensive and successful kind of paternalism the world ever knew, was the free and compulsory educational system, which they were helping to pay for. The cry was that the city would soon clothe and feed the children. The Lord speed the day when it arrives. I am sure that less money will be spent then than now, and the city will have the satisfaction of knowing that it is paying for something that will give a big return, rather than, as now, a useless expense.

As a business proposition, here were citizens contributing to the support of the public schools, and when it was conclusively demonstrated that a large percentage of the appropriation was pure waste, they seemed to occupy the unique position of desiring to continue to pay for failures. The opinion of the masses has always been a true and accurate one, and always will be. Individual examples of children taking a new interest in life after the adjustment of proper lenses for the eyes; after the removal of certain obstructions in the head cavities and the repair of irritating infective conditions of the oral cavity were so numerous that it must needs follow that the natural spirit of self-pride would possess all children within the scope of this influence.

The result is, and must continue to be, that a number of children hindered from reaching the goal of normality on account of certain physical defects, when these defects are remedied, become successful. In fact, with these examples before them, many children who were considered dull had enough intelligence to seek relief voluntarily so that they might "learn better."

The successes simply meant that a large number of children were perfect except for some abnormality. The relief of this abnormality resulted in an approximate perfection. There is nothing mysterious about this. Every one must have noted that the simplest derangement of any part of a great mechanism may result in complete failure of the whole; and the repair of the part, such as tightening a screw, simply results in the establishment of efficiency.

Here is where the specialist must have a care. There may be more than one screw loose and it may have been loose so long that real organic trouble with the mechanism obtains. Here is the place where the skilled mechanic differs from the ordinary—he notes the organic defect and replaces or corrects all the defect. With specialists it is too often the case that they do not see all the defects or use all the forces of nature necessary for repair. Therefore, it results that in a certain percentage of cases the application of the skill of certain special endeavor results in the establishment of the efficiency of the whole, and in almost an equally large percentage the result is negative because the artisan does not comprehend the whole subject. Then it is decided too often that complete efficiency of the case is impossible and therefore that it is useless to proceed.

In an abstract way it seems to me that with few exceptions all brains have the same potentialities, and dependent upon the early environment of the individual the activities of certain brain cells over others results. All brain cells depend for activity on vibration, and if all the conduits to these cells are not in perfect condition to perform their functions, there must sooner or later result a degenerative atrophy of these non-activated cells which can never be re-awakened.

From this I infer that there is in each individual child a critical age beyond which it is impossible by the correction of physical handicaps to re-establish a full efficiency. Many persons going about exemplify this, as we find many people with greater or less areas of lung tissue destroyed, but to all intents and purposes these people live and often succumb to accident or disease other than disease of the lungs. This is also the case in mental disease.

We have no control over the part of the anatomy in which pathologic changes may take place. We have no control over the factors of conception of home, family, social, locality, over father, mother, visitors or street associations, over the fact whether nature has equaled her best in any particular production, over school conditions or conditions of teachers' health who seek to educate their child. All these factors have an influence one way or another and according to the receptivity of the child exposed

certain brain cells are activated to the exclusion of others.

As far as the environment is concerned it has a powerful influence as far as the receptive faculties of the child are efficient in being affected by impressions.

We have no control over the food, digestive efficiency and the results of internal fermentative processes; therefore, it is perfectly possible, due to conditions over which we exert no influence for years, for certain cerebral cells to have a comparatively full functional activity and other cells to be in a state of degeneration or complete atrophy. It may be that the conductors to the cells degenerating are at fault, or that the impressions represented by these cells do not obtain. Whatever it may be we do know that nature abhors inertia as much as it abhors a vacuum. The result is that the activating cells appropriate all the pabulum that should be distributed. The faculty of self-preservation is present in cells as well as in the whole individual and therefore is a slow process. The power of regeneration is present so that, granted a certain individual cell whose conduit is perfect but the normal stimuli absent, up to a certain period the process of regeneration is possible. Beyond this there is no hope. This time, when it is possible for regeneration to obtain, is the critical point. When, where or how this point may be accurately determined I can not say. The school for exceptional children reclaims children when most of the ordinaries consider the critical point passed, and, as in general medicine, the physician who fights to the last extremity is the one I would like with me. So Dr. Groszmann is the eminently resourceful student who continually strives for a good result in all entrusted to his care, with an extensive comprehension of all the factors which may be fundamentally deranged.

Many of the monstrosities which have been described by older writers will be known as matters of history in the future. The Department of Health of this city, through its division of child hygiene, is fast extending its work most consistently and comprehensively. For years the department has endeavored to lower infant mortality by means of a summer campaign among mothers in the crowded tenements. During the past summer real, effective, intense control of certain areas has been exercised to a degree which, as previously stated, would stamp the speaker as visionary. Now, it is a fact and it is further a fact that the past year's work was a doubtful and worrisome procedure.

The department also established milk stations in districts where the very lowest type of children with regard to social environment and vitality were found, and the babies controlled passed through a most trying summer with records beyond the most presumptuous estimate.

The department now goes further and seeks to look after the prenatal state of the baby. When all this work will have been accomplished it may be said that something complete is done to control the psychic and physical well-being of the child.

The State itself now looks after factory working women, and the whole general trend of employers is to look after the whole body of employes for the sake of greater efficiency.

Since real knowledge is the accumulation of acquired impressions in the form of a concrete concept, and every concrete concept entails the conception, intra- uterine life, birth, environment and social factors, until one has exhausted all the factors of environment and of the individual, one is not in a position to claim that the child is irreclaimable; nor, on the other hand, is anyone who assists in the alleviation of one single factor in a position to assume and conclude that any branch of specialized medicine which does its portion of the work is the cause of the successful resuilt.

The study of a child who has been relieved by various specialized endeavors

without successful results is an interesting problem, and the application of specialized pedagogical effort as administered at Watchung Crest as the complementary factor, with eventual completeness of the whole, is what we want. The labors of the physician and pedagogist are related and so co-ordinated that the success of one depends upon the skill of the other.

It seems a little ridiculous that I must criticise accepted propositions and at the same time seek to establish the idea that all are *not* born equal and each has *not* an equal chance of life, liberty and the pursuit of happiness—but we know this statement to be true, and finally we know the doctrine of the survival of the fittest is an obsolete theory, and dependent for its perpetuation to our day because the world had never before harbored so many race culturists. Yet it is a glaring fact that individuals who in later life exhibit every expression of the care bestowed upon them and those reared with the greatest difficulty are often our greatest minds. If the practice of race culture were not applied to them death would occur, and what in adult life is termed the fittest was at birth the unfit, and *vice versa*. Survival of the fittest depended entirely upon chance.

In conclusion, I may say we have reached that point where the child must be recognized as a whole, and if we wish to have an efficient whole we must know the parts and the relation of the parts to themselves and the whole to its environment.

Given, then, a child before the critical period, and given the fact that the child's potentiality is whole, the application of culture to any such individual must produce a finished product.

If we shall have contributed one single mite to such reclamation of the child, we may feel assured we have done some of our duty to mankind, and the world is so much benefited by our existence.

"606"—A WARNING.

The *California State Journal of Medicine* points out that "606" is too good a remedy in which to lose faith, even in the least. The tendency of a number of excellent men would seem to be to still consider this as a better remedy for syphilis than mercury and kali iodid. The frequent repetition of the dose of "606" in those cases that do not respond to one, two or three doses is becoming part of the knowledge of the layman, and he is losing, to a great extent, the faith that was engendered by the extraordinary claims for the drug in the beginning. This is due greatly to his comparison between what he was led to expect and what he now believes he can expect; therefore he is inclined to put much less faith in this remedy than does his physician. It is not an uncommon thing to have the patient, for instance one in whom the lesion is of the mucous membrane, particularly on the tongue, and is persistent, or one in whom a palmar condition resists all other methods of treatment, object to receiving the injection of "606." These examples are given as they are so eminently amenable to the good effects of "606" and are frequently absolutely resistant to other lines of treatment. The physician is thereby handicapped by this frame of mind on the part of the patient. The important point is this: A good, sensible view of "606" should be taken by the physician. It should be considered preëminently as a symptomatic treatment and a marvelous one, and not as a cure-all. Let us not dispense with the time-honored remedies, which are so necessary and which so frequently act far better after the use of the arsenic.

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"WELL," her friend said, "he seems to be able to make an honest living."

"Yes,' 'she replied, "but heavens! who wants to marry a man of that kind nowadays?"

CURRENT MEDICAL LITERATURE.

SODIUM CACODYLATE.

DAWES, in the *Journal of the A. M. A.*, reports the results of experiments on dogs, rabbits, and human beings as to the effects of sodium cacodylate. The therapy of the hypodermatic use of the drug is based on the observation of several thousand patients treated by himself or reported to him by seventy-six other observers, many of them trained clinicians of wide experience. The only untoward symptom observed or reported was a transitory discomfort at the site of injection when the larger doses (0.3 to 0.6 gram) were used. From his experience, he finds that the best results follow the use of relatively large doses daily without intermission, often for several weeks, especially in anemias of long standing. There have been reported to him fourteen patients with pernicious anemia, four of which had short stages of improvement, but finally died. The remainder are reported to have been cured, but in five of them the time is as yet too short to assure a complete recovery. The last five, however, he thinks, may be considered cured, as the symptoms have not recurred for periods, respectively, of fifteen months, eighteen months, twenty-two months, twenty-five months and thirty-seven months. In these five cases careful blood counts were made and he has no doubt as to the diagnosis. He has records of 410 cases of anemia treated by himself and others and in every uncomplicated one there was complete recovery. He has yet to see a case of anemia in which this drug has not rapidly increased the hemoglobin percentage and, as a rule, also the red cells. The most brilliant results have been in neuroses accompanying anemia. Of these, four cases are reported briefly. His records show twenty-two neuritis patients treated, with sixteen recoveries. One patient with tic douloureux recovered, another improved. Fifteen out of seventeen cases of edema were cured. Twenty-two patients with psoriasis gave only nine recoveries and several seemed to be aggravated. Neuralgias and gastralgias generally responded favorably. Certain types of malaria gave quick and permanent response. The importance of having a perfectly pure salt is mentioned, and his practice is to have the druggist give him a number of weighed-out doses (0.1 to 0.3 gram) and keep them in tightly corked sterile vials as the drug is very hygroscopic. It would appear that sodium cacodylate is useful where arsenic is and less toxic in large doses. As regards syphilis, he considers the drug of little or no value.

WARTS AND CHILBLAINS.

Little, in the *Practitioner,* says consideration must be paid to the question whether the chilblains have broken or not—*i. e.,* whether there is simple erythema or vesication with abrasion of the skin. In the former case Besnier's (*La Pratique Dermatologique,* vol. ii, p. 536) method has much to recommend it:

1. Immersion of the parts once or twice a day in warm water, with subsequent—

2. Gentle friction with camphorated alcohol.

3. Powdering the parts with

Starch	9 grams.
Salicylate of bismuth	1 gram.

If the sense of burning and pain is not relieved by these means, occlusive dressings with zinc ointment or Lassar's paste, icthyolated if required, may be used.

When the vesication has taken place, and the vesicles have burst, there is often contamination of the broken surface with extraneous organisms, which may produce much local inflammation. These must be checked by antiseptic lotions, of which hydrogen peroxide (10 vols.) is one of the best. The author has also used with benefit chinosol fomentations (1 in 200-400). If there is no suppuration, carron-oil dressings, or a mixture of lanolin, vaselin, and almond oil, equal parts, may be used. Bodin gives the following as an analgesic ointment:

Boric acid	1	gram.
Hydrochlorate of morphine	0.10	gram.
Zinc oxide	1	grain.
Vaselin	15	grains.

Chilblains may be confused with lupus erythematosus, which frequently attacks the hands, but is seldom confined to that situation; true lupus erythematosus is further very liable to supervene in cases with chilblain circulation, a fact which has originated Hutchison's term of "chilblain lupus." There is no vesication with lupus erythematosus; it is uncommon in young people, who are the chief victims of chilblains; there is no retrogression of the eruption in warm weather, such as takes place in chilblains; and finally there will almost certainly be other patches of lupus erythematosus elsewhere.

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CONVULSIBILITY IN THE NEW-BORN.

Stewart, in the *Medical Council,* advises that, should a new-born child have convulsions at any time during its first week of infancy, the fontanelles feeling full or tense to the examining finger and the eyes showing a spasmodic, convergent squint early in the paroxysm, then the cause of the nervous explosion is intracranial hemorrhage.

If the fontanelles are not tense or bulging, but, on the contrary, are level or depressed, then the mother is (or has been) a hard, though possibly "silent," drinker, not of light wines or beer, but of whisky or brandy, gin, cologne, essence of Jamaica ginger, or spirits of camphor—which substances are mentioned in about their order of use. The author's sole exception was a mother who confessed to two and one-half grains of morphine every day. "And nobody knew anything about it." He has not found the effects of morphine so bad on the offspring as those of alcohol. Both are best avoided, of course. When "cocktails" could be obtained without exciting any adverse comment, they were preferred to the usual tipple because they seemed to "hit the exact spot." As to the intoxication of the father when the child was begot, that seems only a factor if the mother was in fear or terror at his condition. When both were drunk, my observations seem to point to greater maternal effect and lead me to think that an alcoholic mother is more likely to bequeath a state of "convulsibility," and consequently early convulsions, to her child than is the father, though possibly his influence exerts its mastery at a later period in the infant's life. However this may be, convulsions in a new-born child, with lax fontanelles, may lead the physician to a surprising diagnosis in the most respected and hitherto unsuspected quarters. If so, he should protect the woman, as with ordinary tact he may straighten her ways; although the child will usually not live, yet with a careful handling of the circumstances a mother may be protected and reformed, thus the sacrifice may not be wholly in vain. The man who talks openly to the husband or family about the matter may expect to be shown the door, if nothing worse happens to him. His reward will probably be the not very consoling thought that he has stupidly lost all chance of remedying the evil and at the same time has made bitter enemies of a whole family in which he might have acquired the mother for a

lifelong friend. As O'Reilly put it: "Be silent and safe. Silence never betrays."

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HUMAN AND ANIMAL TUBERCULOSIS.

This subject is dealt with in a blue-book just issued. It constitutes the final report of the royal commission appointed to inquire into the relations of human and animal tuberculosis. The present report is volume V, giving the results of comparative histological and bacteriological investigations, under the signature of Arthur Eastwood, M. D., of the Royalcot Laboratory, Stansted, Essex. Details additional to the previous report, are given of the changes produced by bovine and by human viruses in the tissues of experimental animals. To these are added descriptions of animal tissues infected with mammalian tubercle bacilli isolated from swine, horses, a gnu, and an antelope. The histology of various species of animals experimentally infected with avian tubercle bacilli is also dealt with. The bacteriological part contains descriptions of the cultural characters of the various examples of tubercle bacilli which have been investigated; while a comparison is made of the various mammalian viruses investigated, and also of the mammalian as contrasted with the avian viruses.

Among the conclusions arrived at are the following: Comparing mammalian tubercle bacilli of known human origin with mammalian tubercle bacilli of known origin from spontaneous disease in other animals, Dr. Eastwood finds that in every instance the bacilli of origin from animals other than man are identical culturally, microscopically, and in their effects upon the tissues of experimental animals, with bacilli from certain cases of tuberculosis in the human subject. In all parts of the human body, and in human sputum, collected with due precautions to avoid contamination through food, tubercle bacilli have been found which culturally and in histological effects are identical in every respect with the tubercle bacillus commonly present in the bodies of tuberculous cattle and swine. Many of the viruses of human origin grow with greater cultural luxuriance and produce less histological damage in the organs of certain experimental animals than the bacilli commonly obtained from cattle and swine. The results also support the view that changes in the characteristics of a virus do not readily or rapidly take place in the human body. But certain viruses hold an intermediate position between the viruses usually obtained from human sources, and those of common animal origin. Underlying all the mammalian viruses investigated, there is an essential unity of characteristics, the differences observed being differences of degree, but not of kind. On artificial culture media they all grow in the same way, though they differ quantitatively in the amount of growth yielded. In the tissues of suitable experimental animals they all produce lesions histologically characteristic of mammalian tuberculosis, though they differ in the intensity of the tissue changes which they set up under similar experimental conditions. Comparing the mammalian with the avian viruses, there are differences, not merely of degree, but of kind. On appropriate culture media the growth of the avian bacillus can be distinguished without hesitation from the growth of the mammalian bacillus.

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RESECTING THE BOWEL.

Arthur E. Barker, in *The Lancet*, thus describes the technique of this procedure:

When the spot for junction has been selected each part of the bowel is drawn out and emptied by pressure with the fingers. Then they are clamped longitudinally, either singly or side to side, with a Doyen's forceps. Every part of

the wound and between and around the coils and clamps should now be packed with one continuous long strip of sterile gauze from an uncut roll. Then the two coils are united for at least 2½ inches longitudinally at about a third of an inch from the middle of one of the teniæ, a long "tail thread" being left at the end opposite to the needle. The latter and its thread are then covered for the present by a turn of the gauze roll to preserve it from contamination later. The sero-muscular union being now half made the opening in one bowel is cut, for 2 inches or so, through the tenia in the case of the colon. This is best done with scissors. Great care is necessary in making these openings to avoid soiling the wound with the contents of the bowel. Infected mucus within the intestine is best removed with small rolls of gauze held in forceps, fresh material and instruments being used each time. The opening in the other coil is similarly made and cleansed. Personally, the author objects to using any lotion or even sterile saline at this stage lest any of the fluid mixed with feces or mucus should run down over the edges on the intestine; dry gauze is certainly cleaner. A second needle with the same sized thread is now taken, and at the opposite end at which the first sero-muscular suture was begun is made to transfix all the coats of both bowels at about one-eighth of an inch from their edges and is tied, leaving a long "tail thread." From this point the needle and thread are carried over the cut edges of both bowels and again passed through all their coats about a quarter of an inch from the first, and so on until the two edges are united from end to end by a continuous overcasting suture. Then the corner is turned, the greatest care being taken that the serous edges are accurately coated without the intervention of any mucous membrane. When this continuous suture has thus brought opening to opening all round, the suture is completed by tying the "needle thread" to the "tail thread" at the point of departure. The sero-muscular suture is now completed with the needle and thread which has been covered from contamination during the "all coat" suture. Clamps and gauze strip removed and round the anastomosis it is now well to wrap a fold of omentum and secure it with a few interrupted sutures.

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ULCERATIVE COLITIS.

W. Murrell, in the *Medical Press and Circular,* states that the following modes of treatment in his hands have proved inefficacious or of comparatively little value: (1) Opium and morphin in all forms given by mouth, hypodermically or in enemata, special attention being paid to Dover's powder and compound kino powder. (2) Carbonate of bismuth in large doses up to half an ounce every four hours, alternated with salicylate of bismuth. (3) Astringents including the perchlorid and pernitrate of iron, acetate of lead and sulphate of copper. (4) Intestinal antiseptics, such as *B*-naphthol, salol and various preparations of formicaldehyde. High rectal injections of boracic acid Murrell has found useful, and in one of his cases (a) the injection of a 1 per cent aqueous solution of a synthetical preparation of silver at a temperature of 80° F. completely stopped the diarrhea. The peculiarity of the case was that when about five pints had been introduced, the patient being in the knee and elbow position, the fluid was observed running out of the mouth and was identified not only by its physical characters but by chemical tests. Murrell is not in favor of appendicostomy. He says that a right-sided colostomy is in every way preferable and often gives immediate relief to the urgent symptoms. It is a difficult matter to decide when the artificial anus should be closed. If this step is taken at too early a period there may be a return of all the symptoms, while if too long delayed the colostomy may be per-

manent. Even with a permanent opening the existence of the patient, especially in the case of a middle-aged man, need not be very uncomfortable and by the observance of simple precautions he is not precluded from the society of his fellow men. Murrell is sure, however, that in most cases it is better to attempt to close the opening at the expiration of about nine months.

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MODERN TREATMENT OF SYPHILIS.

During the last few months, says Geo. Lacapere, in the *American Journal of Dermatology,* the treatment of "syphilis" (venereal disorder) has been greatly modified by the appearance of new medicaments derived from arsenic, hectine and arseno-benzol, most commonly called "606." Hectine, which had formerly been used, gave very interesting results in some few cases which had resisted mercurial preparations, but its properties are much below those of arseno-benzol, which is now ranked as a first-class medicament.

In the beginning of the treatment they hoped to sterilize syphilis by means of injections of "606." Unhappily, that hope had to be given up, at least, in a great many cases.

It had been proved that, in patients treated by this method, after being calmed for a time, signs of syphilis would appear anew.

On the other hand, it is certain, and can be proved, that most of the syphilitics, after having made use of this medicine, were a much longer time in feeling the least relief from their pains than from mercurial treatment.

My investigations dealt with two very different classes of people.

Firstly, the rich—treated as private patients—not one objected to the number of injections I ordered. On these rich patients I performed Wassermann's sero-reaction to determine the number of injections necessary for the completion of the treatment, stopping the injections when the sero-reaction became negative.

The second class comprises the patients I treated while at St. Lazare. We treated a great number of patients infected with contagious venereal disorder whose discharge was permitted when their eruption had disappeared. Wassermann's reaction was always positive when they left St. Lazare, but as they discontinued their treatment I was by no means surprised to see a certain number of them re-enter St. Lazare with a recurrence of the syphilis. Those having recurrences have been less in number, and slower than after the mercurial treatment, although the mercurial treatment was particularly energetic.

The effect of the Ehrlich aresno-benzol seems to have a double advantage over the mercurial one. Its effects are deeper and more rapid; of course, the number of injections is greatly diminished.

The method always in use in this treatment is the intravenous injection, discarding the subcutaneous injections which offer two very serious difficulties; firstly, they cause great pain, very uncertain in different patients. Those pains can last several weeks. Secondly, a tumefaction is to be feared. Swelling will prevent absorption of a part of the medicine used by the patient, and will create, if a second injection is given, a massive arsenical solubilization, which will surely lead to some internal trouble.

I published, together with Dr. Emery, the technique we use for our intra-venous injections, and will speak of it no more. It must be noted that having treated a great number of cases with higher or lower doses, from 40 to 50 centigrammes for young and vigorous man, later on, for my own satisfaction, I applied smaller doses, 30 centigrammes to young men having a sound constitution, repeating those injections as often as possible so as to obtain a negative Wassermann's reaction.

This practice is also that of Dr. Wechselmann, with whom I have had the opportunity of discussing the results

obtained by "606." I shall write those results and shall relate the effects of the treatments in the first, second and third stage of syphilis.

Finally, in the late syphilitic manifestations, particularly tabes, the action obtained by "606" can be extremely favorable when the damage is only at its beginning.

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PLASTIC REPAIRS OF THE PENIS.

Evan O'Neill Kane, in the *Lancet-Clinic*, describes the measures undertaken in the hope of restoring a penis severed almost entirely with a broadax. The urethra was entirely divided and only enough of the right corpus and skin was left to furnish a feeble circulation to the organ. The urethra and superimposed tissues were sutured together. The patient, who was suffering from delirium tremens, succeeded, while endeavoring to tear off the penis, in withdrawing the catheter, which had been inserted in the repaired urethra, and doing much damage to the sutured region. As a result, violent inflammatory reaction set in, and everything up to the median raphé on the left side turned black, and general septic inflammation took place in the formerly sound right side.

It was necessary to create a new urethra of sufficient length to reach the meatus, and the problem was naturally from whence to gain the tissue. There was not enough upon the remaining body of the penis to readily invert, except for the space of an inch from the severed extremity of urethra, without endangering the integrity of the remainder of the organ. In this region considerable elastic skin remained. A flap was made, turned over to create a urethral canal with an epithelial lining, and made to adhere to a freshened portion of the granulating tissue of the left side. The urethral orifice was freshened also and sutured to the same flap. Skin grafts were then placed upon the raw surface from whence the flap had been elevated, and also upon the external raw surface of the flap itself. A catheter was placed in the urethra to retain patulency.

Despite the extravasated urine and frequent surreptitious inspection by my patient of his wound, good healing took place, and the urine flowed with freedom from the extremity of the newly-formed canal. A slit nearly three inches long was made longitudinally in the scrotal tissue, a raw surface one-half centimeter wide (the granulating tissue upon the entire length of penis had now cicatrized) was then created down the remaining length of penis from the termination of the new canal to the meatus along the right margin of the organ, and this was united firmly to the gaping slit in the scrotal tissue by lines of sutures, one on each side of the raw surface.

The scrotum and penis were now fastened firmly together by a pedicle fully a centimeter wide for the entire length.

The next step was to draw across to the left side of space upon the penis elected as the future urethra an abundant fold of the scrotal tissue three centimeters from the recently created union to penis, and to a freshened surface on left side of penis fasten it as on the other side. The gap between the two segments of the urethral canal were sutured together. A retaining catheter, as before, was introduced. Perfect union took place.

The final important step in the operation was to cut loose the scrotum completely from the penis by two parallel incisions, each one and a half centimeters distant from the line of union, and the suturing together of the flaps thus formed, in order to make a scrotal tissue skin for the penis, thus obviating the inelastic cicatricial character of the part which would have obtained should the surface have been left to heal by grafts or granulations.

CONTRADICTIONS OF THE THERMOMETER.

By Lawrence Hodges.

On an ordinary Fahrenheit thermometer there is written opposite 212 degrees "Boiling point of water," and opposite 32 degrees, "Freezing point of water." Neither of these is correct except for a certain condition of the atmosphere, and that is when it gives on the barometer about thirty inches, or fifteen pounds' pressure to the square inch. This is the ordinary pressure at what is known as sea level, and to this all thermometers are calibrated. In a mountainous region the pressure is hardly ever so much as fifteen pounds, and water boils at sometimes as low as two hundred degrees.

If water is boiled in a diving bell, where the pressure is forty or fifty pounds a square inch, its temperature will be several hundred degrees instead of two hundred and twelve. If water is boiling in a near vacuum, the temperature is so small that the hand thrust into the water would actually feel cold.

What has been said about the boiling point applies to some extent to the freezing point; but here it differs for different materials, whereas the remarks about the boiling point of water apply to the boiling points of all liquids. Some substances when they freeze become larger, while others are smaller. On this depends the freezing point at different pressures of atmosphere. Water expands on freezing; so do type metal and some other things. All other substances become smaller on freezing. Water pipes burst when the water freezes. Coins of gold and silver are stamped instead of being molded; for the metals grow smaller on freezing or solidifying, and consequently the coin would be wabbly.

It has been found that the things that expand on solidifying, as water, freeze at a lower temperature when the pressure is increased, while the others freeze at a higher. When a substance that expands freezes under higher pressure than usual, it has to exert more force to shove the pressure away, and consequently has to use up more of its heat energy, thus losing more heat, and consequently becoming colder. Take the substance that contracts when it solidifies. The pressure will help it to get smaller, and consequently the greater the pressure the less heat it has to lose on attaining the solid state; so it will freeze at higher temperature. If the pressure is great enough, it may freeze or solidify at a thousand degrees' temperature, which is high enough to change most substances to vapor under ordinary atmospheric pressure. This is one of the reasons advanced to prove that the interior of the earth is solid; for the assumption is that the core is made up of substances that contract when freezing, and there is of course an enormous pressure a few hundreds of miles below the surface.

In regard to the boiling points of liquids, there is an upper limit to the point at which a thing boils; that is. changes to the state of vapor. It is called the critical temperature. No matter how great a pressure exists on a substance, if it is at a temperature greater than its critical it will change to vapor anyhow. The ignorance of this point held back the making of liquefied gases —such as air, carbondioxid, etc.—for many years. The experimenters tried to liquefy gases at ordinary temperatures by enormous pressures; whereas if they had just cooled the gases below their critical temperatures before applying the pressure liquefaction would have ensued immediately.

This is the method employed today in making liquid air. The air is compressed at first, and then allowed to issue from a small orifice, thus expanding and cooling. is then pumped back and compressed by the pump, allowed to go through the orifice again, thus cooling still more, until at last it is below the critical temperature, when the compression caused by the pump liquefies it.

THE PROSTATE IN CHRONIC GONORRHEA.

W. P. Willard, in the *California State Journal of Medicine,* discussing the prostatitis of gonorrhea, states that the principles of treatment are to remove from the diseased gland the products of an inflammatory, round-celled infiltration and stimulate the production of normal tissue, and to inhibit the growth of organisms. This is accomplished by the production of local hyperemia in various ways, which raises the resistance of the tissues. When the natural resistance is strong enough to inhibit the growth of bacteria in the ducts, acini, glandular and periglandular tissue, the prostatitis is cured. If the resistance were strong enough at the time the germs entered the urethra, the disease would not have developed, and in this way we can best explain the immunity of some and the infection in others when exposed to the same source of contagion.

Do not expect any drug to penetrate the prostate gland from the posterior urethra and do good from its germicidal properties. We need an irritant for counter-irritation and so get hyperemia, and this accounts for the better results in this condition from nitrate of silver than from the newer and less irritating silver salts.

In treating a prostatitis much patience and time are required and it is well to inform the patient that you will probably only treat him twice a week, but that it will take quite a few weeks before he is well. Do not try to rush with daily treatments, for you will probably get an acute exacerbation of the trouble.

The patient must abstain from intercourse and alcoholics during and for a few weeks after treatment has been stopped, and it is often necessary to forbid bicycle riding, horseback riding and automobiling on account of trauma. Carbonated drinks and condiments should be avoided and the general health looked after.

Massage of the prostate, which is the most important procedure, not only causes a hyperemia, but also an emptying to a certain extent of the gland. At first massage is apt to be painful, even when the prostatic inflammation is not acute on account of irritating the wall of the bowel. As soon as the patient becomes accustomed to it the amount of pressure as well as the length of time can be increased. Do not be rough in massaging and never massage an acutely inflamed gland. Often on account of muscular contraction the prostatic fluid will stay in the prostatic urethra or enter the bladder and it is necessary to have the patient urinate to obtain it.

If any urethral stricture is present this should receive treatment, and the use of a sound in the posterior urethra produces hyperemia of the gland to some extent. In the use of drugs I prefer instillations of rather concentrated solutions rather than irrigations with large amounts of weak solutions. Nitrate of silver in from ½ to 2% solutions causes quite an irritation and localized artificial congestion. About thirty minims is sufficient, and if a Guyon olivary tipped catheter is used it is quite easy to feel the point slip into the posterior urethra. The use of 10% and 20% solutions applied through the posterior endoscope can be used, but are seldom necessary. The use of the rectaphore is a great aid and if used for ten or fifteen minutes occasionally has a good effect. During an acute inflammation it can be used with the water about 116-18° and in the chronic cases it is well to follow this with cold water.

The use of bacterins is often beneficial and autogenous ones are always preferable. The gonococci are difficult to grow, but where there are other organisms, which is often the case, they can quite easily be obtained and be used once in five days in gradually increasing

doses. Some care should be used in streptococcus infections, as the author has seen quite severe reactions in doses as low as thirty millions.

Do not overtreat these cases, but, on the other hand, do not weary of treatment. When you find the pus very much diminished and the normal prostatic elements in the secretion, it is wise to stop treatment for a time and see if the condition will not clear up.

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OBSTRUCTIVE BENDS IN THE INTESTINE.

Franklin H. Martin, in the *Journal of the A. M. A.*, points out that there are four parts of the intestinal tract that suffer notable distortion and lead to pathologic results from an anomalous condition of the mesenteric attachments and inadequate support of the abdominal walls, viz.: The duodenum, the terminal portion of the ileum, the appendix vermiformis and the sigmoid. The distortion usually occurs as the result of the two principal causes combined but may occur in a less aggravated form from only one of the two. In his paper he specially treats of the treatment of the so-called Lane's kink, the term applied to a pathologic bend of the last six inches of the ileum. The cause of the kinking of the ileum at this point is due, he thinks, to its possessing an extremely short mesentery.

Given this comparatively fixed portion of the compressible tube, there are two factors that lead to its distortion: (a) a too movable or displaced large bowel; (b) an abnormal position of the remainder of the small bowel or other viscera. Adhesions occur from extension of infection from the appendix and uterine appendages, from violent friction of the opposed serous membranes, from violent mechanical action resulting from the factors causing the distortion and, rarely, from the direct migration of bacteria through the intestines. He has observed, accompanying Lane's kink, prolapses of the cecum and ascending colon, also of the stomach with transverse colon below it and a general tendency to visceral prolapse, and he thinks the kinks or bends are due, therefore, to such causes. The conditions may be congenital or acquired.

The method he pursues in relieving the condition is laparotomy through a right rectus incision and treatment of any concurrent diseased condition after careful exploration of the abdomen. He especially separates adhesions about the sigmoid and straightens out any acute bends of the intestine, as it is the acute bend in the bad position made permanent by adhesions which causes symptoms. He then brings up the head of the cecum with the terminal portion of the ileum. If it is covered with an adventitious membrane, as it frequently is, this should be torn through and the underlying structures freed. The ileum then should be made taut to reveal the adhesions and these carefully divided with a knife, or, when particularly frail, with sponge dissection. This releases the intestine and it will straighten out. The patient should be in the Trendelenburg position during the operation.

After the bend is freed the cecum and attached ileum are replaced in the normal position, the omentum spread over the parts and the abdomen closed. The patient is kept in the Trendelenburg position for a week or so and systematic gymnastics of the abdominal wall are given later for fifteen minutes twice a day with the patient in the Trendelenburg position without the abdominal support which is worn during the day. This should be applied and removed with the patient in the Trendelenburg position when the abdominal exercises are given. Careful regulation of diet is followed in the after-treatment, with special reference to increasing the flesh, especially the normal deposit of fat. Twelve cases are reported.

THE LEECH TRADE ONCE UPON A TIME AND NOW.

The Paris correspondent of the *Chemist and Druggist* quotes from *Le Mois Littéraire,* a popular illustrated monthly, some interesting facts regarding the decrease in the use of leeches and the consequent decline in the leech trade, especially in France. We are told that forty years ago there were in Paris alone ten wholesale dealers in leeches, each of whom sold between three hundred thousand and four hundred thousand leeches monthly, for which they received, on an average, about fifty dollars per thousand. Today there is only one dealer in the capital and he gets from 6 to 7 francs ($1.20 to $1.40) per hundred. His name is Leya, and he handles about 130,000 per month, his best market being the United States. He has sometimes half a million in stock.

In former times the Paris Poor Law Administration (*Assistance Publique*) purchased 80,000 francs ($16,000) worth per year; this was in the thirties and forties of the nineteenth century; the administration now finds itself amply supplied with $40.00 worth annually.

The great breeding ground for French leeches was the marshes around Bordeaux. A poor peasant named Bèchade, who was known as "Old" Bèchade, was the creator of the industry. He rented a tract of marsh land for about sixty dollars and this, when properly stocked with leeches, became worth five thousand dollars. Bèchade collected the leeches by buying all the worn-out horses he could get hold of and driving them into the marshes five or six times a month, especially in April, May, June, October and November. Bèchade's business flourished and when he died he was worth a million francs.

After a while the French leech trade was ruined, not only on account of the great decline in the demand, but on account of the accessibility of other sources of supply, brought about by the improved facilities of transport, fast trains bringing them in a short time from Turkey, Bohemia and Dalmatia and to a more limited extent from Algeria and Russia.

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CATGUT STERILIZATION.

Hutchings, in the *Annals of Surgery,* places raw catgut, without any previous treatment, in suitable tubes, which are left open, and put in an ordinary vacuum desiccator over sulphuric acid. The air is withdrawn from the desiccator until a pressure of less than four minims is secured. The connection between the desiccator and the pump is then closed, the pump removed, and the desiccator set aside for eight days. At the end of this period air, dried if necessary by passing through a Wolff bottle containing sulphuric acid, is allowed to enter the desiccator. The tubes are removed and sealed, and are ready for sterilization. Any method of heating may be employed, but the author in his work used a mixture of glycerin and distilled water with a boiling point of 150° C., the container being fitted with a reflux condenser. The sealed tubes are placed in the container and boiled for two hours. Experiments made with catgut impregnated with various bacilli showed that after this method of sterilization none of the catgut was contaminated. Control animals inoculated with the gut before sterilization died of the diseases.

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THE WEST END.

The proofreader on a small Middle Western daily was a woman of great precision and extreme propriety. One day a reporter succeeded in getting into type an item about "Willie Brown, the boy who was burned in the West End by a live wire."

On the following day the reporter found on his desk a frigid note asking, "Which is the west end of a boy?"

It took only an instant to reply—"The end the son sets on, of course."

EXTRAORDINARY TEMPERATURES.

Milton B. Lennon, in the *California State Journal of Medicine,* reports the following rare case of body temperature:

On September 29th I saw, with Dr. Thos. E. Shumate, a young married lady who had a steadily rising temperature since the preceding Monday. Since no pathological changes could be ascertained on physical examination, except a slight systolic murmur at the base of the heart, the surmise of hysteria seemed a logical conclusion. The doctor informed me that he had curetted the patient on September 10th because of bleeding following a miscarriage. The abortive outcome of her pregnancy was a source of chagrin and disappointment to the patient and she took it deeply to heart. All went well until the Monday before I saw her, when noticing a slight tinge of blood on the bed sheets, she became greatly agitated, restless and sleepless, and from that time until the end of the week refused all food save asparagus tips, for which she evinced a marked predilection. My examination of the patient agreed with that of Dr. Shumate. I was loath to conclude that hysteria alone was present; however, that the patient was hysterical was plain from her demeanor, her childish, petulant talk, her having a doll on her arm, and, perhaps, her unconcern about her temperature, which normally she would have appreciated, since she had been a nurse. Her skin was cool, and I doubted the thermometer; her pulse was but 80. A rectal temperature was taken and it measured 105° F. I suggested quiet and warm baths. The first bath resulted in her pulse advancing to 130 and great alarm on the part of the nurse. Steadily rising, the temperature reached 107° F. by 8 o'clock in the evening and at midnight measured 109° F. The next morning further consultation was had. Dr. William Watt Kerr examined the patient and found her heart in a better condition than it had been in March last. Neither Dr. John Gallwey, nor Dr. John Graves, nor Dr. Alden could find any further physical change to account for the temperature. I was asked to take the patient in charge. I had no great expectations from any antipyretic measure. The patient was brought to the St. Francis Hospital, a new nurse gotten and solitude, as far as possible, ordered. Since the skin was cool despite the high registrations of the thermometer, an electric pad was put on the abdomen and ice irrigations given. The temperature advanced to 111° F. An ice bath given in the afternoon resulted, or better said, was followed by a drop of 2° F. In the evening a sedative and a second ice bath were given, and in the course of fifty minutes there was a drop of 13° F. without the least sign of shock. During the night the patient rested well, but at 6 a. m. the following morning 110° F. were recorded and by 9 o'clock another degree had been added. With the remembrance of what had followed the night before, a second sedative and bath were given, and the nurses complained of the frigidity of the water; twenty minutes later 114° F. were recorded. During the greater part of the day the temperature was above 112° F.; during the night it dropped a little, but on Monday, October 2d, it was again at 112° F.

The patient was moved to another room, one cooler, quieter and more commodious than the one she had been in. She thought she had been brought from the operating room where the curettement had been done three weeks before, and had lost all memory of the intervening time. When I called at noon she failed to recognize me and wondered who I was. She talked clearly, and was hungry, but still registered 107° F. By 5 o'clock her temperature was normal. Except at the time of the warm bath her pulse never advanced above ninety beats per minute. Needless to say, we all doubted the registrations of the thermometer, but many were used by many persons. Measurements were taken in the axilla, rectum and mouth, singly

and simultaneously, and coincided. We regretted that the temperature of the urine had not been taken. This omission was compensated for shortly after the patient went home, when her temperature went skyward again and this time to 115° F. When her temperature by rectum was 105.4° F., the urine was 106° F., and when the rectal measurement was 115° the urine was the same. The patient is now well.

This perplexing case teaches at least three lessons. Firstly, patients without toxemia may tolerate great temperature. Secondly, the pulse rate is not dependent upon the temperature. Thirdly, hysterical temperatures are not influenced by the usual hydro-therapeutic measures which are so efficient in toxic fevers.

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WHY THE USE OF TORICS SHOULD BE ENCOURAGED.

A continental journal, the *Revue Francaise d'Optique,* in recommending opticians to push the sale of the more expensive glasses—those which give superior optical results—says that one should hesitate to recommend toric lenses "always." The journal adds that it is necessary to explain the superiority of toric over ordinary lenses, if the better article is to be sold. Now, toric lenses, although by no means a new discovery, are comparatively new on the market in a commercial sense; so it may be that some of our readers would feel uncertainty even today in discussing the advantages of compound toric over simple or compound cylindrical lenses. We shall therefore offer a reminder as to the mechanical peculiarity of the newer type, and notice some of the principal points in its favor. Incidentally, it will appear that while there are toric equivalents for all spherical or cylindrical, simple or compound spectacle lenses, it is not possible to advise toric lenses "always"—at least, this can not be done without setting conscientious scruples on one side, and consoling one's self with the sordid reflection that toric goods afford a better profit.

In a popular sense, the usual description of a toroid (toric surface) as resembling the segment of an egg or of a piece of cycle tire, or curtain ring, can hardly be improved on. Optically, it corresponds with what we may picture as the coalescence of two cylindrical lens surfaces crossed at right angles to one another. Therefore, anyone who understands the rule of transporting ordinary spheres and cylinders, can equally well calculate formulæ for equivalent toric lenses. There is an unlimited choice of transpositions for this purpose; or, rather, the choice is only limited by commercial considerations which require that one of the cylindrical or base curves shall be prescribed of a standard power, say 3, 6 or 9 D., the 6 D. base being generally preferred, and therefore commonly stocked by wholesale houses. Taking one of the standard base curves for the starting point, the prescriber applies the ordinary rule of transposition to determine the supplementary cylinder and the sphere, which will be worked to his order to any of the usual fractions of dioptric power. Since toric surfaces can be ground either concave or convex, it will be evident that the two curvatures of any simple lens can be transposed into toric curvatures, and a slight advantage could be claimed for such "toric sphericals" in certain cases where expensive reading-and-distance lenses are required. But, speaking generally, torics are to be advised only when a spherocylindrical effect is sought.

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PNEUMONITIS.

The author of the above article (see September issue of this journal, 1911) desires to urge all who try the measures advocated not to neglect to use the formula for tympanites. It is used invariably by the writer in all cases that are not aborted, or in which the fever continues longer than twenty-four or

forty-eight hours. It can be used in larger doses to suit the indications presented, and in reasonable amount is harmless.

Even infants of six to nine years of age should be given *one-third to one-half* of the formula; it is frequently ejected, but it can do no harm, only good will result from its use.

See case reported in other journals illustrating the applicability of the treatment to *complicated* cases occurring at different seasons, with modifications necessary to meet the requirements of the case in hand. The formula in question is appended:

Formula for Tympanites.

Quiniæ sulph., pure..... 10 grains.
Glycerinæ, pure....3. I. vel. 2 drachms.
Aqua férvida, pure..... 8 ounces.

M. ft. enem. Sig.: As an enema night and morning as far removed from the salt water irrigation as possible.

Half of this can be used for an infant of six to twelve months of age.

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THE BACTERIOLOGY OF THE COCKROACH.

Conyers Morrell, in the *British Medical Journal,* gives the results of a series of observations on the life-habits of the common cockroach, and some experiments made with the object of determining the part which it plays in the distribution of micro-organisms. The distribution and numbers of these insects are rapidly increasing, and unless preventive measures are adopted the insect is likely, in the course of time, to become a very troublesome and possibly a very dangerous domestic pest. It will eat almost any edible material, and, in addition, such materials as sputum, pus, decaying refuse, books, and even blacking are consumed. It has been shown that contamination with its fæces will bring about the souring of milk, and the insect is in all probability an active agent in the souring of milk kept in kitchens and larders; and, in addition, is undoubtedly a very important factor in the distribution of moulds to food and numerous other articles, especially when they are kept in dark cupboards and cellars where cockroaches abound. The cockroach may also play a small part in the dissemination of tuberculosis and in the transmission of pyogenic organisms.

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TREATMENT OF FLATULENCE.

Sir R. W. Burnet, in the *Practitioner,* advises that in cases of flatulence the diet should be carefully chosen and somewhat restricted. A rather dry diet will be found most useful in nearly all cases; soups and broths should be excluded, and only a little liquid allowed at the end of a meal. Tea must be limited in quantity, and when taken should be freshly made. Too much green vegetable is not usually well borne, and what is given should be rubbed through a sieve—cooked as spinach is served. It is often advisable for a time to substitute toast or second day's bread for potato. Farinaceous foods have to be given carefully and the effect watched, but where digestion by the stomach is chiefly at fault starchy foods may be given in greater amount because they are dealt with chiefly in the intestines. Meats are given with more satisfaction when digestion goes on best in the stomach. Whether meat or farinaceous food preponderates in the dietary, the absolute necessity for slow eating and complete mastication of all solids still remains. One of the most useful remedies for flatulence is nux vomica. Bismuth is of use in many cases, and should be given with sodium bicarbonate and calumba or other bitter infusion. Extract of malt given with or just after meals helps in those cases where the digestion of starchy foods is obviously difficult. A pill containing a grain of reduced iron, with extract of nux vomica, quinine, and compound rhubarb pill is often well borne. It acts as a tonic and also as a mild aperient and may be varied by replacing the quinine by one grain of pepsin and one-twentieth grain of arsenious acid.

THE DOCTOR HIMSELF.

FEE SPLITTING.

THE *Medical Standard* does not regard this as a matter of any special complexity. There can be but two sides to it. Either the specialist is engaged by the family practitioner, or else by the patient himself or his family. If by the patient and his family, then the specialist and the practitioner have nothing whatever in common, so far as their financial relation to the case is concerned. In that event, there is nothing to be done except for the general practitioner and the specialist to render separate bills; and there is no necessity for their even knowing what the other charges. Indeed, in such cases it is usually the rule that the patient or his family settle the matter of the specialist's fee beforehand, so that there is no possibility of any illicit collusion between the two doctors. But it should be a matter of medical ethics that where the specialist is engaged by the family, the services are separate and distinct affairs.

If, on the other hand, the expert is to be retained by the physician, the situation is different. Then the patient is in the position of a man who engages a firm of lawyers to represent him in court, and says to them, in effect, "Win my suit; if, to do so, it is necessary to engage special counsel, engage him; only win the suit, and render your bill." Now nobody imagines for an instant that a lawyer, invested with this responsibility, is going to retain the cheapest special counsel he can find, and charge for the most expensive; nor to retain as special advocate the man who will split him the biggest share of his fee. In the first place, there is no need of playing tricks of that sort, for he has been practically given *carte blanche* to get and pay the best man; and in the second place, the special counsel whom he retains is a part of the lawyer's own armamentarium, so to speak, to minister to or to detract from his own reputation, as the case may be. So that he has neither need nor incentive to use any underhand methods.

The doctor, charged with the responsibility of retaining an expert, is in precisely a similar position. Neither necessity nor inducement influence him to play crooked. His own interests will actuate him to get the best possible assistance procurable within the means of his patient. He has but to select that assistance, add to the expert's fee his own charge for his services, and present to the patient a joint bill for the entire transaction—itemizing if requested.

DOCTORS' FEES IN ANCIENT GREECE.

X-Rayser, in the *Chemist and Druggist,* relates that doctors' fees in Athens at the time of Pericles were much less than seems to have been supposed, and our modern practitioners would have turned up their noses at them. The income of Greek physicians in the classical period has usually been calculated from what Herodotus tells us of Democedes, at one time physician at the Court of Persia, who was so much in request in Greece that different cities appear to have bid against each other for his services. In Ægina he received a yearly salary reckoned as equivalent to 314*l.* of our money, in Athens one of 406*l.*, in Samos one of 422*l.* This was a century before the time of Pericles, and it is to be supposed that salaries would increase with the lapse of time and growth in luxury; but Mr. Zimmern says the case of Democedes was quite exceptional, he being a person of social importance, and that no general conclusion can be based

upon it. Doctors, he declares, were classed as craftsmen, along with schoolmasters, sculptors, masons, joiners, and others, and were paid at the standard rate of a drachma (from 4*s.* to 5*s.* in purchasing power) per diem. He adds: "They all earned a decent livelihood, which was all they asked in pay." This continued until the close of the fifth century B. C., when prices began to rise slowly. He makes no distinction between the rate paid to slave doctors and to freemen, though one would suppose from the terms in which Plato speaks of the former ("Laws," 720)—who, for the most part, treated slaves only, and that empirically—that they would have received much less than their masters, though the latter would get a good share of their slaves' earnings. It is true that life was much simpler then than now, and money much less thought of, the motive of labor being rather service for the state than private gain, but these figures are a little surprising. Mr. Zimmern contrasts in somewhat caustic terms the Athenian ideal in such respects with our own. What he would have said if his book had appeared after instead of before the meeting at the Queen's Hall, at which the doctors declared their determination only to serve the state on terms of their own choosing, one can only guess.

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MEDICINE IN FICTION.

This is the title of an interesting and amusing article by Dr. S. Squire Sprigge, editor of *The Lancet,* in this month's "Cornhill," in which complaint is made, firstly, of the treatment doctors too frequently receive at the hands of novel-writers by being represented as either impossible heroes or incredible villains (Dr. Sprigge does not say which misrepresentation he considers most injurious); and, secondly, that in their descriptions of the symptoms and progress of diseases most writers of fiction are dreadfully unscientific. He makes an exception with regard to plague, which has (thanks, apparently, to Defoe's lead) been upon the whole well described by them, and he singles out for praise Mr. H. James's descripton of phthisis in "The Portrait of a Lady," Charles Reade's account of the recovery of Helen Rolleston from the same complaint in "Foul Play"—which is, he says, a remarkable forecast of our present treatment of pulmonary tuberculosis—and Maupassant's of cardiac disease in "Une Vie." Of the knowledge of medicine displayed by Flaubert in "Madame Bovary," he makes no mention — a strange omission. Fevers, insanity, and dyspepsia seem to have been pitfalls for imaginary writers; they do not, however, as Dr. Sprigge wittily says, "hit below the belt," but leave kidney, liver, and spleen alone. Probably it would require more literary ability than most of them possess to make an enlarged liver interesting, not to say romantic, although the liver was at one time regarded by our poets as the seat of the affections, which afterwards removed to the bowels, before taking up their residence finally, let us hope, in the heart. Dr. Sprigge appears a little jealous of the favor shown to the hospital nurse by novelists. He assures us, somewhat unnecessarily, that she is not the soft-voiced ministering angel they imagine her, who tends her patient unweariedly day and night, and does not even leave him to get her tea.

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LONDON DOCTORS AND THE INSURANCE ACT.

Following the meetings held in various parts of the country to protest against the present form of the act, a mass meeting of medical practitioners was held at the Queen's Hall, London, W., on Tuesday. The meeting was attended by some 2,000 medical men. Doctors came from all parts of England, and there were also some from Scotland and Ireland. The meeting was largely in the nature

of a revolt against the recent action of the British Medical Association, in connection with Mr. Lloyd George's scheme, and forms were circulated for signature, requesting the council of the association to summon a general meeting for the discussion of a resolution to the effect "that the council has failed in its duty towards its members."

In opening the proceedings, the chairman said that the Chancellor of the Exchequer had said to the poor people, that under the Insurance Act they would have many benefits and free medical attendance. Up to the present time, continued the chairman, no definite arrangements had been made with the medical profession to provide the benefits promised. Little or no notice had been taken of the representatives of the medical profession, and their demands had been shelved or handed over to bodies outside Parliament to do the best they could with them. What were they to do? That was not a strike of the medical profession. They were not refusing to continue to treat the poor as they had always done. They were only saying to the Chancellor of the Exchequer that they did not like his terms, and they preferred to go on treating the poor as they had always done. He believed that in many respects they would be worse off now than before the act. Who was there to replace the doctor? asked the chairman, and amid loud cries of "No one," a voice replied "Sandow," which caused great laughter. The chairman declared that there was no one who could take the place of the doctors, and if they stood together that meant gaining their point. He appealed to them, in conclusion, to fight through the association, but added that if they did not agree with the council, they must as masters find fresh servants to carry out their wishes.

There were two resolutions on the agenda. The first declared that the meeting was of opinion that the six cardinal points originally formulated by the association were not guaranteed by the provisions of the act in a manner to satisfy the profession. The second declared, as the opinion of the meeting, that every medical practitioner should refuse to accept any office under the act until the demands of the profession had been recognized.

Dr. F. J. Smith moved the first resolution, and reviewed the points of the act as it affected the profession. He declared that although there was said to be free choice of doctors, that was taken away by the fact that the commissioners could remove a doctor from the panel. He contended that doctors were not adequately represented on the commission, and after criticising several other points, said they gave to the council of the association a mandate to insist upon the six cardinal points as their minimum, or die in the last ditch. The council had not died in the last ditch, but had thrown its medical secretary there to appease the appetite of the chancellor.

Mr. Milton Townsend, in seconding the resolution, said that was the first stage of the campaign. If they kept together they would force the government to give them their just demands, or to strike out the medical provisions of the bill.

An extraordinary scene took place when the resolution was about to be put. Sir Victor Horsley rose in the hall to ask a question. He was at once recognized, and greeted with a terrific uproar. The chairman invited him to come to the platform. This he did amid a pandemonium of howls and hisses, and stood waiting for silence, and nearly five minutes elapsed while the din continued. The chairman declared that they were spoiling the meeting, and for a few moments he obtained silence. No sooner, however, than Sir Victor begun to speak than the hubbub broke out afresh, and Sir Victor Horsley retired, literally howled down.

The resolution was then passed with very few dissentients.

Mr. Percy Raiment, who moved the second resolution, was constantly interrupted, and there was hardly a moment when there was silence for the speakers. He submitted that it was not only legitimate, but absolutely imperative, that the boycott of the medical provisions of the act should continue in such a form that the Government either embodied their six principles in a short amending act, or dropped the whole medical provisions of the present act in their entirety. Having decided that their only possible course was an absolute refusal to work, the problem that confronted them was how best they could obtain unanimity of the profession, and strong concerted action that would compel the Government to listen to their just demands. He wanted them to leave the hall with a sense of the injustice of the act, and fired with indignation that a great and honorable profession should have been made a mere pawn upon the political chessboard, to be moved as it suited politicians — men who were careless whether any particular move was for the benefit of either the country as a whole, or the class whom the act was supposed to assist.

Dr. Arthur T. Helme, who seconded, evoked the wildest enthusiasm. "Is cheap club practice under lay control the summit of your ambitions?" he asked, and for several seconds the hall rang with shouts of "No!" After dealing with the act, he proceeded to advocate refusal by the doctors to accept office under the act. Sir Victor Horsley had said that they had refused to work the act on any terms. "I throw the words back in the face of the president of the council," said the speaker. "We have not refused to work the act on any terms. We have offered to work it on our own terms, and there, so far as we are concerned, the matter ends. The profession will continue to give its charity to the poor, but it will not allow Mr. Lloyd George to give his charity at someone else's cost.

Dr. Hart (Manchester), secretary of the recently formed Medical Union, on the other hand, was greeted with loud cheers. He said that the union insisted on the six cardinal points, and was gaining hundreds of adherents.

The resolution was carried amid enthusiasm.

The Referendum.

In response to the appeals of thousands of its medical readers, the *Practitioner* last week took the first step in an active policy against the National Insurance act by issuing a referendum to the profession. The question asked was:

"Are you satisfied that the arrangements made for the profession with regard to the medical service now embodied in the National Insurance Bill would justify you in giving honest and adequate service to the insured?"

On Tuesday, the following announcement of the result, together with the pledge form below, was sent out from the *Practitioner* to every member of the profession in Great Britain:

The National Insurance Act.

Twenty thousand seven hundred and twelve answers to our referendum have been received in five days. The returns up to December 19th, morning, are:

"No"	20,149
"Yes"	352
Queries	211
Total	20,712

These returns afford overwhelming proof that, in the opinion of the profession, the terms of the present National Insurance Act are such as to make it practically certain that medical men could not give an efficient service, and that, as a result, the public could not receive that beneficial treatment to which it should be entitled.

Consequently, no further referendum is necessary to prove that in the opinion

of the medical profession the act, so far as they are concerned, is unworkable.

Therefore, are you willing to combine with the rest of the profession in signing the pledge printed on the form below? As it would be useless to bind only a moderate proportion of the profession, a clause is inserted in the pledge to the effect that if the members of the profession in Great Britain fail to combine with you in this pledge in sufficient numbers, your pledge will automatically become null and void.

A copy of this paper has been dispatched to every member of the profession in Great Britain (29,567). Ireland has, of course, been excluded.

Kindly use the form below and return at once to the *Practitioner*, 2, Howard Street, Strand, London. Envelope to be marked "private."

PLEDGE.

Feeling that the present National Insurance Act is unjust to the Medical Profession, I hereby pledge my word not to accept any service whatsoever under it. I stipulate, however, that unless at least 23,000 members of my Profession in Great Britain combine with me in this Pledge I am to be freed from it.

Name and Degrees.....

Address .....

.....

DARING SELF-SURGERY.

The *Presse Médicale* gives an extraordinary account of an operation for hernia performed on himself, under the influence of spinal anesthesia, by a young Roumanian surgeon named Fzaicou, aged twenty-six. Suffering from a left inguinal hernia, an epiplocele the size of a hen's egg, which though readily reducible had become obstructed three times in the previous year, he decided it was necessary to have it operated on. Like most continental surgeons, he entertained an exaggerated idea of the risks of general anesthesia, and so debated with himself whether he should have it done with local or spinal analgesia. As, however, he was preparing a thesis on Jonnesco's strychno-stovaine method, the daring thought occurred to him that, if it were possible to operate on himself, he would be able to describe, subjectively, all the symptoms in a manner that no amount of careful objective study could approach. This feat, in spite of the opposition of his colleagues and teachers, he attempted, as the result proved, with success, and a full description, with photographs taken during the operation, is contained in the paper.

He directed that seven centigrammes of stovaine and one milligramme of strychnine, injected between the eleventh and twelfth dorsal vertebræ, should be the dose and site. His colleagues, however, injected him in the usual lumbar site, and used only two-thirds of the specified dose. Sitting up on the operating table, with his legs hanging over the end, and his instruments collected all around him, he impatiently awaited the spread of the anesthesia, and as he found it traveled very slowly, at the end of five minutes had himself lowered into the supine position. This caused the anesthesia to spread into the inguinal regions; nevertheless, at the end of eighteen minutes after the injection, on attempting to make the skin incision, he found he was still sensitive. His colleagues at this stage attempted to dissuade him from going on any further with the attempt, and refused to repeat the injection, as he requested, whereupon he injected himself locally in the groin with stovaine, which he had prepared in case of such an emergency. Twenty-five minutes after the spinal injection, he commenced the operation. It lasted an hour, the method performed was a modified Bassini, and there was no sensation of pain except when the cord was handled. Occasionally he felt a little vertigo when he stooped forward or turned his head rapidly. He was anesthetic to the umbilicus, but no effort was produced on the manipulative skill of his

fingers or on his intelligence, which remained perfectly clear.

Anesthesia began to disappear about an hour after he was put back in bed. The temperature was above normal for a few days, and he had practically no sleep for the first three nights. Violent epigastric pain, relieved by pressure, was a constant feeling at first, besides pain in the back radiating from the spine, followed by frontal and temporal headache on the fifth day. At the end of a week all these symptoms had disappeared. From personal experience, therefore, he found that the anesthesia came on and went off painlessly, was perfectly safe, could be limited in its upward spread by position, produced a practically complete loss of sensation in the parts operated upon, and did not interfere in any way with the reasoning faculties, or the fine movements of the hands necessary in performing the operation.

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HYGIENE IN THE MIDDLE AGES.

Another proof of the importance attached to hygiene by enlightened physicians of the Middle Ages, says the *British Medical Journal,* is afforded by an announcement made in the "Progrès médical" of April 8th. Dr. Limon, of Besançon, is said to have discovered in the library of that town the manuscript of a work by Guy Paré, a Milanese physician of the fifteenth century. It is entitled the "Régime de Santé," and treats of the means of preserving health. As a specimen of his teaching some passages are given from a chapter devoted to the hygiene of the mouth, a subject which has come to be regarded as of such vital importance in quite modern times. He says: "To keep the mouth in a healthy state, it is well to wash it out before and after a meal with warm water, as this cleanses the mouth and purges the humors of the gums which come down from the head. This prevents foul breath. It is very advisable every day to rub one's teeth in the morning when fasting with a powder composed of cloves, nutmeg, and a spice called spikenard in hypocras." Hypocras, or hippocras, it may be mentioned, was an infusion of spices such as cinnamon or sweet almonds, with a little musk and amber, sweetened with sugar and honey. It was a cordial in great repute in the olden time. Then follows a list of things which make the breath fresh and sweet. Among them are citrons, a confection of musk, aloes, bark, cloves, and a number of other things with strange names, which it is difficult to identify. He enumerates a number of things that make the breath foul. Among these is mercury, which he says corrupts the mouth and the saliva; fragments of meat left between the teeth, milky substances, and everything that putrefies even slightly. After eating such things, one should carefully wash the mouth and clean the teeth, rubbing them gently with some bark or fruit peel which has bitter and astringent properties. Care should be taken, he says, not to break hard things with the teeth, nor to chew viscous substances, such as dates, confection of honey, and the like. Here Guy Paré condemns in anticipation the eating of sweets, which is too common everywhere, and the chewing of gum, which, as far as we know, is a habit peculiar to America. A too free use of emetics, also, we are told, tends to rot the teeth. Cold things should not be eaten, for they freeze and chill the teeth; other things which are harmful to the teeth are milk, pomegranate, leeks and radishes. The skin of citrons and sage leaves are useful as dentifrices. A prescription of special efficacy contains burnt hartshorn, roses and other things, of which, unhappily, we are unable to give the modern equivalents. Before the teeth are rubbed with this powder, they should be carefully cleared of all remains of food and foreign substances of every kind. Those, says our author, who are

very particular, such as princes and great lords, may rub their teeth with a powder made of pearls, mixed with a very small quantity of fine sugar. This powder, he assures us, is very good, but he is careful to add, that it is very dear.

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THE SMUG RICH.

I have sometimes thought, says Butler, in his "Just Among Friends," in the *American Journal of Clinical Medicine,* that if the Lord means to destroy a man he first makes him moderately rich—gives him just enough money to turn his head and then leaves him to his own devices. What such a man is not capable of in the way of meanness is not worth mentioning. A millionaire snob is bad enough, although he is of full growth and can be tolerated, but the consequentiality that stalks up and down the earth like a bantam in the midst of eagles, and fills the air with feathers and squeaks, is a type to make men weary.

Do you not know such people? Some of them live in the suburbs of large cities because the rents are cheap, not because they have any love for pure air and nature. They form themselves into cliques, and call themselves "the best society," when they know no more about the "best" than a city alderman knows about the court of a king. They apply the standard of the purse and never that of the brain. They will frown upon a young man who publicly associates with anybody outside of their "set," but overlooks the fault if he ruins a poor girl quietly and without exposure. Breach of purity is more readily condoned by them than breach of etiquette. They tolerate dudes so everlastingly fragile of brain and limb that they ought to be kept in cotton like Florida orange buds, yet look with disfavor upon young men and women who work for a living. They patronize the arts in the same way that a butterfly patronizes a rose. They sing a little and dance a great deal, and play bridge, and talk together with about the same display of wisdom that characterize the counsel of a herd of sheep or a flock of crows. They look down upon people who are not willing to go through life "like peas in a pod" or like "tallow dips in a mold." Their enthusiasms are well enough, so far as they go, but they never unfurl more than a square inch of bunting at a time. Their value in this wide world of action is very much what the value of tin soldiers would be on a field of battle—very neat, very shining and correct, but nothing but toys after all.

They have enough money to keep automobiles, but whom do they take to ride? The poor and the sick, the discouraged and the forlorn? Not to any monotonous extent. Their favors are not given without due regard to future returns. They do generous things in the same way that they give wedding presents—with an eye to value received. They might meet a fellow creature on a plank in the middle of the sea or on an oasis of Sahara and never presume to speak without formal introduction. Oh, I am tired of talking about them! Were I the wind I should blow them away like dandelion disks. Empty-headed, with hearts of steel and bowels of brass! May the Lord who allows such shoddy folk to live, appoint them a corner to themselves in the "sweet by and by."

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A MEDICAL LORD MAYOR.

Sir Thomas Boor Crosby, M. D., was inaugurated Lord Mayor of London, on November 9. His term will be the 723d mayoralty of the city, and, as he is eighty-one years of age, he is one of the oldest, if not the oldest, citizen ever to occupy the office. He is also the first medical man honored in this way. He was knighted in 1907. He is a Fellow of the Royal College of Surgeons and ex-president of the Hunterian Society. At one time, he was Demonstrator in Anatomy and House Surgeon at St. Thomas's Hospital.

THE SICK ROOM.

MEDICAL NURSING.*

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Chills.

A CHILL must be noted. It may be a mild one, or very severe, where the whole body shivers and the teeth chatter; even the bed may be shaking. The first stage of the chill is usually followed by a second one, when the temperature rises several degrees and the patient feels hot. This again is followed by a period of perspiration. Such chills, during the course of a disease, always have great significance, and it is important to note the time they occurred, the period they last, and also the change of temperature, pulse and respiration, because they indicate a complication of the disease which quite frequently sets in by the chill; and the severity corresponds to the gravity of the complication. During the first period, the patient is to be covered with extra blankets, hot bottles applied to the feet, hot drinks to be given. During the second period the blankets are gradually removed to make the patient feel cooler and more comfortable. While at the third, the profuse perspiration ought to be wiped off and the clothes at the end of this period changed by a fresh suit of clean, aired and warmed ones. The contact of cold linen with a hot perspiring skin may cause another chill.

You have noticed on your first examination the character of the skin of the patient. The color may become paler, bluish, or yellow. You must notice all these changes in color and also in the appearance; hardness or edema; swelling of a certain part of the skin, or a whole limb, one or both. Edema is easily discovered by pressing the finger tips in the skin, which leaves a mark and this depression does not rapidly disappear.

Discharges.

Any discharge from the nose, eyes or ears is to be marked down and reported. While speaking of discharges the most important ones to be placed on record are the discharges from the bowels and the bladder. The condition of the bowels must be carefully watched, noting if there is any constipation or diarrhea. The number and character of the stools, their quantity, appearance, color, consistency. Any abnormalities, like foreign bodies, visible to the naked eye, or pieces of undigested food. This is all very much worth while mentioning. Black movements follow the use of certain drugs like bismuth, iron and charcoal. When hemorrhage has taken place in the stomach or bowels, and the blood is retained in the intestines a long time, the movements are black and tarry; while if the bowel movement follows the hemorrhage soon, the blood has no time to change, and it appears bright red. More so if the hemorrhage occurred in the lower part of the bowel. It is also of importance to note if the feces are thoroughly mixed with blood or if blood follows evacuation. This would mean that some injury is done to the outlet of the bowel and such blood is due to hemorrhoids, piles, or a fissure of the rectum.

The bowels are not always accommodating enough to relieve themselves of their contents and accomplish one of the main excretory functions of the body. In cases of constipation a prompt relief is given by administration of enema.

*A series of lectures given to the Seniors of the Jewish Hospital in Brooklyn.

Enema.

Enema is a liquid preparation injected into the rectum. Its character and constituents depend upon the purpose for which it is given. If only for emptying the bowel, one or two pints of soapsuds of tepid temperature is injected into the rectum, a fountain or bulb syringe is used for that purpose. The syringe is hung up four or five feet above the level of the bed so that the water shall flow in slowly and if a bulb syringe is used the compressions shall be made steadily to insure an even flow. The nozzle of the syringe, after being thoroughly oiled, is slowly, by rotary movements, inserted into the anus. The water may not run in freely because there may be impaction of feces in the rectum, and the nozzle of the syringe is buried in them while the water hasn't got force enough to go through the hard fecal masses. In such cases we have to insert the finger to convince ourselves that there are no impacted feces. Another obstacle preventing the free flow of water into the rectum may be caused by pressing of the nozzle of the syringe on the wall of the rectum. The mucous membrane will cover the opening of the nozzle, thus preventing the water from running out. In such cases, by withdrawing and changing the position of the nozzle so it shall correspond to the axis of the lumen of the rectum, will overcome the obstruction. Hard fecal masses accumulate quite frequently in the lower bowel and cause considerable annoyance to the patient and if the nurse will not keep in mind the possibility, she may even report several fluid defecations where the patient is thoroughly constipated. In protracted illnesses, in feeble patients, in old people, the expulsive power of the muscles of the bowel is so much weakened that feces accumulate in the rectum. In the course of time they form a hard, solid mass, and the liquid contents of the upper portions of the bowel find their way through the hard compressed masses, forming grooves through which the fluid feces can pass. Even enemas can be given through such abnormal canals with success. The examination of the rectum with the gloved finger shall be made at the least suspicion that an accumulation of feces is possible or that an administration of enemas presents some difficulties. The nurse will at times be in a position to clear up a case of obstinate, painful diarrhea, and forestall surprises which at times are not of a very pleasing character. In a simple case of constipation, a soapsuds enema answers the purpose. In case of fecal impaction we must inject some oily material to soften up the hardened masses and then wash them out with water. We frequently meet with cases where the place of impaction is higher up in the bowel and the rectum is empty. The injected water will not reach then the affected part and it is necessary to direct the water higher up. We give then what is called a high enema by means of a rectal tube. A special large-caliber rubber tube is manufactured for this purpose, but in the absence of such, the tubing of an ordinary fountain syringe can be advantageously used. In introducing the tube we must be certain that the tube is directed properly towards the upper parts of the bowel and is not curling on itself inside of the rectum. If the injection with the rectal tube is done slowly and under the guidance of the finger, such an incident can be avoided, and then we are really giving a high enema when the upper part of the rectal tube is largest in the sigmoid. For a high enema we may use soapsuds or, to produce more violent and effective peristalsis, we add to the water, turpentine, about one ounce; glycerin, four ounces; or sulphate of magnesium, one ounce, or rochelle salts. Oxgall added to such an enema is very effective in causing peristalsis. Of course, the ingredients of the enemas will

be ordered by the doctor. Salt water (saline) enemas have a more stimulating effect, and a few ounces of this solution injected slowly and high in the bowel is readily absorbed and acts as a stimulant. More stimulating are enemas of black coffee, whisky, brandy, alcohol, wine. The amount of stimulant and the size of the enema varies according to the condition and the age of the patient, and a detailed specification is to be expected from the attending. These stimulating fluids are given by the rectum with the view that they are readily absorbed. This physiological fact of absorption of fluids by the lower bowel gives us the possibility to nourish the patient by rectum when we can not offer food by mouth.

Rectal Feeding.

Rectal feeding is a very important, at times life-saving measure. Nutrient enemas are to be given not oftener than every three or four hours, and the quantity shall not exceed six to eight ounces. They contain, as a rule, milk, peptonized or pancreatinized, beef juice, egg, etc. I want to mention that they are to be given warm the temperature of the body (cold fluids cause peristalsis), injected slowly. Don't use glycerin in lubricating the nozzle because glycerin is irritating to the mucous membrane. After three or four such enemas are given, a cleansing enema ought to be given, otherwise the mucous membrane of the bowel will be clogged by the particles of food, and absorption interfered with. Of course, rectal feeding can not be used indefinitely. The rectum rebels to the imposition of duties physiologically assigned to the stomach and in a short while we have to deal with an acute condition of irritation, even inflammation, of the rectum. In such cases we have to suspend for a while the rectum feeding and give soothing enemas, which consist of a decoction of starch, flaxseed, oatmeal, or Indian meal, with the addition of ten to twenty drops of laudanum. These soothing enemas are used in cases of diarrhea where the intention is not only to clear the bowel of its contents, but also to heal the inflamed surface. In cases of diarrhea, antiseptics and astringents are at times added to the enemas, like boracic acid, borax, salicylate of sodium, salicylic acid, alum; a very weak solution of nitrate of silver is used. Of course, a solution of one or the other drug depends upon the character of the case, and a minute instruction is given by the doctor.

Urination.

Urination is a function of the body which frequently calls for relief. The number of ounces of urine passed in twenty-four hours, the quantity of urine passed each time, and the character of the urine shall be carefully noted by the nurse. The color, the appearance, the lucidity, the sediments are all to be noted. Also if the micturition is free and painless, or the urine is dripping. Dripping urine is very often the result of an overflow of a distended bladder, and such a bladder must be relieved by catheterization. In most of the cases inspection of, or placing the hand upon, the lower part of the abdomen, will disclose a prominent tumor which in its location corresponds to the bladder and will inspire the nurse to use the catheter. Cystitis due to catheterization is a crime laid at the door of the careless attending, be it the doctor or the nurse. You have seen and practiced the catheterization of patients in the wards, you have watched the preparation for this every-day procedure, and there is no necessity for me to dwell on the description of it. Your eye helped you much better to memorize the details than my words will. I shall only mention that I would prefer that you empty the bladder under the direct guidance of your eye. Expose the parts and see exactly what and how it is to be done. I do not approve of the skillful

nurse who tries to insert the catheter in the dark, under the sheet. In collecting the twenty-four-hour specimen of urine, it is important that the urine shall be kept in a tightly closed vessel and the urine shall be emptied into the vessel immediately after it is voided; being but a solution of organic substances it is easily decomposed. The examination of such decomposed urine is often very misleading because some of the ingredients disappear, and to prevent such a decomposition it is wise to add to the vessel assigned for the collection of the twenty-four-hour specimen a small quantity of chloroform or a few crystals of thymol.

Instrumental Applications.

The bowels and bladder are not the only organs that call for trained instrumental applications.

There is the stomach, which is to be emptied and washed through a tube. There is the nose, and the ear, and the eye and the larynx. But these are special procedures, the description of which will carry me too far. They require a special technic and they are not in the province of our program. If any of you will select as a specialty a certain branch, you will familiarize yourself very promptly with these methods. I shall prefer to mention only such applications whose knowledge is obligatory in the curriculum of every trained nurse.

Therapeutic Measures (Bathing, Sponging, Cold Pack, Etc.).

In your lectures on pharmacology and dietetics you were instructed in the administration of food and medicines to the sick. You were told how to administer drugs, you have learned the care necessary in carrying out orders. I shall confine myself to therapeutic measures which are applied in many diseases to the surface of the body.

Most of the cases you will be called upon to nurse will be of an acute character and most of these acute diseases are accompanied by one symptom—fever. The course of a disease is marked by elevation of temperature. Fever is not a disease, it is a symptom caused by the disease, and by treating the fever we do not treat the temperature alone. We try to reduce it only in cases where the excessive and prolonged elevation of temperature has an injurious effect on the body tissues. To reduce fever, we may order drugs, so called antipyretics, but all these have a deleterious effect on the heart and nervous system and have to be used cautiously and only for a short time. The other way of reduction of temperature is by application of cool or cold water to the surface of the body. We order a cold sponge, a cold pack, or a cold tub bath.

In giving a cold sponge, it is advisable to begin with tepid water and by dropping a piece of ice in the vessel have the water gradually cooled down. This will avoid shock to the patient. Do not expose the whole body at once. Do it gradually, one limb after another, the anterior surface of the trunk, then the back. Use some friction, be it a soft cloth or a soft glove made out of cloth, but don't be rough. Don't skin the patient. Don't cause abrasions. I have seen a very energetic nurse tear off part of the nipple of a male breast in a patient with typhoid fever. She was too strong and the rag too coarse. After going thoroughly over the body, cover the patient up with a blanket and let him dry off. The slow evaporation of water will increase the reduction of temperature, which after a sponge bath is usually not very marked, about one or two degrees, and it is used with preference in mild forms of fever in children, delicate and old people.

The cold pack is a more vigorous hydro-therapeutic measure. One or two woollen blankets are spread over the bed; then a sheet wrung out of cold water, or if you don't want to be cursed

very much by the patient, wring out a sheet of tepid water and after you have wrapped the patient up, take a chunk of ice in your hand and rub the ice over the wet sheet. The effect is the same, only it is better tolerated by the patient. After the patient is wrapped up do not forget to wrap separately each limb by tucking in the sheet between the arm and the chest; cover him up with blankets underneath, and let him lay in it for fifteen to twenty minutes. Take him out, put him in a dry blanket, and let him rest. He usually enjoys this. You will find the temperature greatly reduced and the condition of the patient generally improved. His pulse will be slower, his respiration deeper, his sensorium clearer. By the way, the contact of the hot body with a cold wet sheet produces a contraction of the superficial vessels in the skin and rushes the blood of the internal organs to the head. To avoid such a congestion of the head, wet the head with cold water, place a wet towel on the head, or put an ice bag on it.

Tub Bathing.

In severe cases, where a rapid and marked reduction is desired, we put the patient in a tub filled with cool water. We formerly used real cold water for that purpose, but lately we prefer a tepid, gradually cooled off bath. Let us say we start with a temperature of eighty-five, and by adding cold water or dropping ice in the tub, slowly reduce it to sixty-five. The patient is lifted with the sheet in the tub (I speak now about private practice, where we may not have the modern mechanical appliances) and let down slowly. Of course, plenty of help is needed, and while he is in the water his body shall be constantly and gently rubbed to induce a better circulation and a better cooling off of the whole volume of blood by continually bringing it to the surface and in contact with the cold water. The duration of the bath is ten to fifteen minutes, according to the condition of the patient. The first moments he may become cyanosed, feel chilly, his teeth will chatter, but his color soon becomes better and he quiets down. The temperature after such a cold bath often drops a few degrees, and such a drop is accompanied by a general improvement of other symptoms. We expect such a beneficial action of the above described applications of cold water in our fever cases, but we are frequently disappointed. Our patients are not always obliging and do not react to suit us, and here is where we appreciate most a close observation and interpretation of the symptoms by the nurse. She shall carefully chart the conditions of the patient following the application of cold water, and the accurate statement and description of the symptoms will guide the physician in continuing or discontinuing his orders.

I have tried to acquaint you, in general, with most of the common therapeutic measures which we apply for relief of one or the other functions of the body or some pathological symptoms. The general rules are applicable in many cases, where the indication arises, and now, we will consider the special diseases of certain organs, and I will try to present you a condensed picture of the causes, symptoms, and treatment of ailments, which you are liable to meet in your practice.

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SODA AS A CLEANSER.

How many home-keepers, asks *Good Health*, realize that the common baking soda is a valuable cleanser? When the porcelain sink becomes stained, nothing will bring it back to its natural whiteness and with so little effort as soda. Bathtubs may be kept in perfect cleanliness by using soda once a week when rinsing them out. It should be thrown in liberal quantities down the drain pipes, too. Dump a goodly lot of it over the drain, then pour on boiling water. If this be

done often there will be no disagreeable smell about the kitchen sink. A handful of soda added to the water with which the kitchen floor is scrubbed is better than a like amount of advertised cleansers.

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THE BATHROOM AND THE FORMATION OF HABITS.

The Chicago Health Department *Bulletin* sees a close relation between a clean, well-equipped bathroom and the formation of habits in children. If there be one room that above all others should be kept spotlessly clean, says the *Bulletin*, it is the bathroom. If you have money to spend, put a goodly portion of it into the bathroom construction. Tiled floors and wainscoting are non-absorbent, easily kept clean and house vermin of all kinds find in them no abiding places as are afforded by wooden floors and lathed and plastered walls.

"The attractive, well-equipped bathroom is a good habit-former. Its influence on the children in helping them to habits of personal cleanliness can not be overestimated. A prominent New York settlement worker, in a recent address, said that it was not because the poor people of the city were by nature dirty and untidy, but because from their childhood they had not had the bathroom facilities that would give them a chance to keep clean.

"In order to help children in the formation of good habits, you should get them to take a delight in doing right things. They are not likely to want to take baths because 'they are good for them,' for the simple reason that they can not see nor understand the whys of sanitation. But they do take naturally and most kindly to things that are pleasant. If the bathroom is dark, stuffy, cold and disagreeable, they will avoid it and enter it only when compelled to. If, on the other hand, it is light, airy, heated in winter and with tub and fixtures clean and attractive, they will find joy and pleasure in its daily use. And this makes such a bathroom the very best kind of a habit former.

"Here is a story told by a Chicago mother, and which found its way to the editor of the *Bulletin:* 'About a year ago my husband was given a raise in salary and we decided to use the money in refitting our bathroom. We did this for the reason that our boys would not use the old one without rebelling every time I asked them to bathe. Well, when the work was all done and the room looked so clean and white, the boys changed front immediately. The only trouble I have now is that once in a while there is a scrap between the boys on account of one of them staying in too long.'

"This little story illustrates the point we have been trying to make—that the bathroom should be built in the most sanitary way and should be kept clean all the time, to the end that it be an inviting place for comfort and for health."

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ADRENALIN AND ANESTHETICS.

Esch, in *Wiene Med. Wochenschrift,* says the method of action of suprarenal gland preparations when used in combination with local anesthetics has been the subject of investigation by the author. Experiments were made with the object of discovering the relative amounts of anesthesia produced by solutions of cocaine of equal strength, first with and then without the addition of adrenalin, when the action of adrenalin in making the tissues anemic had been excluded. The results obtained show that the peripheral narcotic action of novocaine, alypin, and especially cocaine, was greatly increased by the addition of adrenalin; and, since the effect of local anemia was excluded, this increased action must be attributed to a specific action of adrenalin upon the nerve tissues—an action which has not previously been recognized. The anesthetic action of tropacocaine was not increased by the addition of adrenalin.

REFRACTION.

THE PUPIL IN HEALTH AND DISEASE.

By Henry R. Swanzy, A. M., M. B., F. R. S. C. I.

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PART I.

The Pupil in Health.

THE size of the pupil in health depends chiefly on the intensity of the light to which the eye is exposed, contracting when light falls into the eye, and dilating when in shade. However defective vision may be, if quantitative perception of light remains, the reaction of the pupil as a rule takes place.

There is no absolute standard for the physiological size of the pupil. The latter varies in different healthy individuals, being in general smaller in elderly people than in youthful subjects; for with increasing age the energy of the sympathetic—the dilating nerves of the iris—is reduced, while there is sclerosis of the walls of the vessels of the iris and rigidity of its stroma. Hyperopic eyes are apt to have small pupils, owing to the constant effort of accommodation; and in myopia, for the converse reason, the pupils are wide. The diameter of the pupil when the accommodation is at rest has been found to vary between 2.44 and 5.82 mm., giving an average diameter of 4.14 mm.

Tange's very careful investigation showed that the size of the pupil varies very much in individuals; that women have larger pupils than men; that the physiological dimensions of the pupil diminish with age; that the pupil is smaller in hyperopia than in emmetropia; that the size of the pupil becomes less as hyperopia advances; that the physiological dimension of the pupil in myopia up to the twentieth year is greater than in emmetropia; that with increasing age the difference in the dimensions of the physiological pupil in different kinds of refraction becomes less, until beyond the fortieth year it is insignificant; and that the color of the iris has no influence on the size of the pupil.

Contraction of the Pupil.

Contraction to light is a reflex motion, the optic nerve being the afferent nerve, and the third nerve the efferent nerve innervating the sphincter pupillæ. It has been shown by high authority that there are special afferent fibers in the optic nerve for the pupil reflex distinct from those for vision, and that it is possible to distinguish with the microscope these two kinds of nerve fiber from each other. But it must be stated that there is a good deal of divergence of opinion as to the nerve paths by which the pupil reflex is brought about.

The test for the light reflex is performed in diffuse daylight with the patient's face directed toward the window, a distant object being looked at, and the eye which is not being examined being carefully excluded from the light. The examiner, having observed the size of the pupil to be examined, excludes the eye from the light with his hand for some moments. On removing the excluding hand, a normally reacting pupil will be found to have dilated, and this dilatation, after an interval of about half a second, will be seen to give way to an extreme contraction, which is maintained for only a moment, and is then succeeded by a moderate dilatation, and the pupil then contracts again somewhat, and so on, until, after a few moments' oscillation, it comes to a standstill. A comparison between the maximum of dilatation and the maximum of contraction, along with the promptness and rapidity with which the contraction takes place,

enables the observer to form an estimate of the activity of the pupil reflex to light.

In performing the test it is important that the patient's gaze should be fixed upon a distant object so that the pupil contraction, which is associated with convergence and accommodation, may not vitiate the experiment; hence except in cases where a mere trace of light perception remains in the eye, the test used with artificial light is not so reliable as that performed with daylight.

In addition to the stimulus of light, the pupil-contracting center is excited by, or at least simultaneously with, the effort at accommodation for near vision. The object of this contraction is to cut off rays falling on the peripheral part of the lens, which rays are not refracted in the change for accommodation as much as in the central portion of the lens. This contraction, however, is more intimately associated with convergence than with accommodation; for the pupils do not contract if accommodation be effected without convergence, but in convergence without accommodation contraction is observed. It has also been found that the contraction is proportional to the degree of convergence, but not to the degree of accommodation, and that in myopes of high degree contraction of the pupil takes place at the other side of the far point, where, of course, the accommodation does not come into play at all.

Dilation of the Pupil.

The most reliable investigations have proved that there is no such muscle as a dilator pupillæ. The dilatation of the pupil is in all probability the result of an inhibitory action of the sympathetic nerves. The posterior limiting membrane of the iris is its only structure which is not thrown into folds when the pupil dilates, and therefore there can be little doubt that it takes an active part in dilating the pupil, probably by reason of its elasticity. Yet, inasmuch as, after the pupil is dilated by paralysis of the third nerve, further dilatation can be produced by atropine, it would seem that some other dilating power resides in the iris not yet ascertained.

While light falling on the retina is the only stimulus capable of bringing about a reflex contraction of the pupil, the pupil-dilating center reacts to every sensitive stimulus, as, for example, a pin-prick or a pinch on the neck, galvanism applied to the leg, the tickling of a sensitive part of the face in the region of the fifth nerve, and upon shouting into the ears very loudly. Indeed, it is not necessary, in the human subject, that the stimulation should produce any conscious sensation for stimulation of the skin of the affected side in one-sided sensory paralysis, as also in sleep and coma, will find response in the dilation of the pupil. Some psychical emotions produce dilatation of the pupil. The pupils of a cat dilate in anger, and so do those of a frightened child. In sleep, or when under the complete influence of an anesthetic, the pupils are contracted, for then all psychical and sensitive stimuli are reduced to a minimum. Facts authorize the conclusion that the ordinary dilatation of the individual's pupils in health depends chiefly upon the intensity of these stimuli transmitted through his sympathetics. If in any individual they be slight, his pupil is contracted; if they be intense, it is dilated. Hence in delicate, nervous, easily excited people the pupils are habitually dilated; in slow, phlegmatic persons they are habitually contracted.

Action of Drugs.

Inasmuch as a maximum dilatation can result only from paralysis of the pupillary branches of the third cranial nerve, combined with excitation of the pupillary branches of the sympathetic, and as atropine effects such a dilatation, it is evident that atropine acts in the way indicated on both these nerves. Duboisine, hyoscyamine, scopolamine, and daturine act similarly to atropine, Strychnine,

while it dilates the pupil, only indirectly affects it by over-stimulation of the sympathetics.

Eserine is in all respects the antagonist of atropine, paralyzing the peripheral endings of the sympathetic in the iris and stimulating the endings of the branch of the third cranial nerve in the sphincter pupillæ. Pilocarpine and muscarine act similarly, but with less energy. Nicotine, applied to the eye, is found to act like eserine. Morphine has an antagonistic effect on atropine, both as regards the pupil and also as regards the general system, and these drugs are used respectively as antidotes to poisoning by the other.

(To be continued.)

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EFFECT OF TILTING LENSES.

Dr. G. C. Savage, in a recent article, cites the well-known fact that the tilting of a spherical lens increases its refractive strength at right angles to the axis of tilting, and that the tilting of a lens to the extent of 45° practically doubles its refracting power at right angles to the axis of rotation without changing its power in line with this axis. In this way a spherical lens is made to have an astigmatic effect or the effect of a sphero-cylinder. The fact is easily demonstrated by anyone.

If the tilting of a lens increases its power in one meridian, then an object viewed through a lens that has been tilted so that a person looks obliquely through it will be distorted, and the greater the tilt or the more obliquely the lens is looked through the more distorted the object will appear.

The above fact is easily demonstrated by holding a plus spherical lens between an electric lamp globe and a card. The lens should be held at about its focal length from the card. A picture of the globe will appear on the card, and if the face of the card and lens are at right angles to the line of light the picture will be exactly the same shape as the globe, but if the lens be tilted so that the rays of light pass obliquely through it the picture will be elongated or distorted, and if the tilt be great the picture, instead of being the shape of the globe, will be simply a streak of light. What has taken place on the card is exactly what takes place on the retina of the eye when we look obliquely through a lens.

It is therefore an established fact that we must look practically straight through a lens if we are to obtain the best results. It then follows that a lens so constructed that the wearer can look straight through it when looking around, as when viewing a landscape, will be superior to one that does not possess this advantage. Periscopic lenses, especially those possessing this principle to any great extent, do not allow the wearer to look practically straight through them when looking in different directions.

This principle was first applied to minus lenses, which at one time were practically the only form of lenses that were worn constantly, and therefore used for all purposes. Until a few years ago, comparatively it was a rare thing to see convex lenses worn except by presbyopics when reading or doing work close at hand, and for this purpose the biconvex form, if adjusted so that the line of vision is at right angles to the plane of the lenses, is quite good.

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MENTAL INTERPRETATION OF THE RETINAL IMAGE.

A. W. Stammer, in *The Optician*, points out that, while a clear retinal image may be absolutely necessary to good vision, a clear retinal image is not vision in itself, though it is usually spoken of as if it were. Given this clear image, it is only a question of time before experience establishes the properly developed function of sight.

But, asks the author, what of a baby whose eyes are not of such a shape as

shall make normal vision possible? These eyes also transmit sensations that are interpreted by the mind into sight, and I am becoming more and more convinced, that under certain circumstances, these sensations are interpreted into sight closely resembling that possessed by the normal person.

The working of the mind is at present very little understood, but the whole question practically turns round the question of memory. The whole of the mental processes might be termed a series of comparisons—*i. e.*, we are continually comparing sensations received with sensations of a similar kind received on some previous occasion, and reasoning from this evidence. Now, in the case of a myope, we know that he sees a distant object simply as a blur, but the myope knows as regards most things, what object the blur really is. Take a tramcar as an example. A tramcar seen by an emmetrope through a 4.0 D. lens is simply a blur, but the myope knows what a tramcar really is like by closer acquaintance with it on past occasions, and it is highly probable that the myope sees mentally the tram pretty much as it really is, and not simply the blur that the retinal image would justify.

This argument, if true in any degree, would apply more to acquired myopia than to the congenital variety, a variety, by the way, I am quite convinced, exists.

All this simply paves the way for the question I want to ask, which is this: Is it possible for the mind to become so accustomed to more or less correctly interpret a false retinal image that it fails to properly appreciate the true image when the proper optical correction makes its formation possible?

Does this theory help in any way to understand why a fairly strong oblique cylinder often causes so much distortion and discomfort? If a cylinder is necessary, and is placed in the proper position, the retinal image should be, and doubtless is, in the great majority of cases, true, but we all know that the patient at first often strongly resents the correction. I have more than once had to modify what I am certain was the proper sight in order to get the patient to wear the glasses at all, subsequently altering them again. It is my settled conviction that this is, in many cases, due to the wearers having for so many years, more or less, correctly interpreted a false retinal image that they are for a time liable to falsely interpret the true one.

I have written at this length on what might seem a very trivial subject for this reason. I must either believe that this view is so common and so well understood, that mention of it in any book is considered unnecessary, or that the factor of visual education does not enter into the question of refraction at all, and comment is therefore needless; but I do not find myself in agreement with either of these views.

However, if there is anything in it, I think it is worthy of a place in the modern refractionist's mind, along with the ever-increasing mass of information that it is now undoubtedly necessary that he should possess.

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CORRECTION OF HYPEROPIA.

Lionel Laurance, in the *Institute Journal*, calls attention to the well-known fact that the theory and practice of sight testing differ materially. The majority of eyes are hypermetropic, and hypermetropia is a condition that occasions no trouble to one person, while it does to another, although both may be of the same age and have the same degree of error. All must sooner or later suffer discomfort — asthenopia — and deficient vision from the defect, and it is usually at that period, shortly after the advent of discomfort, that the case is seen by the optometrist. The average person who is hypermetropic to the extent of, say, 2D, at about the age of fifteen, has attained to that degree of error with which he will be burdened throughout life, or anyhow, until he is quite old,

and the deficient refraction of old age makes its appearance. But while the total extent of the error remains the same, that which is manifest in a test increases gradually year by year.

If seen at this age of fifteen and presuming that there is .75D of hyperopia manifest, what lenses does the youth need? If, as is generally the case, there is neither asthenopia nor defective vision nor any other evil attendant on the hyperopia, obviously no correction is required. The youth has unconsciously learned to exert more accommodation than convergence, the former action exceeding the latter in quantity expressed in the usual terms of diopters and meter angles respectively. But if vision is clear and without discomfort, it must be because the efforts of the two functions are equal, although the quantities produced are not. Thus this typical hypermetropia of 2D. accommodates for distance 2D., while convergence=O. It is true that if a test of the muscles be made, there is usually shown an esophoric imbalance which, however, is not of high degree; it may be 2Δ or 3Δ, and not 2 M.A. or 12Δ. This shows that when the one eye accommodates 2D., but fusion is made impossible, the innervation for convergence does not greatly exceed zero; probably in such a case if accommodation=O, there would be a divergence of the visual axes.

For vision at the reading or writing distance of, say, 40 cm., there is required for fused clear sight 4.5D. accommodation and 2.5 M.A. convergence still without discomfort, so that it may be inferred that 1D. of accommodation accompanies 1 M.A. of accommodative convergence.

Now, this state of affairs may go on until, say, for example, twenty-four years of age. At this age a certain discomfort is experienced in close work, following perhaps on an illness, or an unusual spell of close work, as for instance, when going in for an optical examination. The question then arises why in the year 1911 there should be asthenopia, and none in the year 1910? The amount of total hyperopia has not changed, even the manifest is but very slightly different; certainly the amount of accommodation required for clear vision is precisely the same; the muscular force of the individual has not lessened, and the illness, or the examination does not account for it, for the asthenopia remains, notwithstanding a complete recovery or the successful passing of the examination, when the unwonted perusal of books is done away with.

The answer to the query seems to be the lessened accommodative action which results from a given effort owing to lessened resiliency of the crystalline lens. The asthenopia is not, as yet, felt in distant vision, so that the change is most probably, for the present at least, confined to the accommodation which accompanies convergence, or to put it in another way, the effort of accommodation has to be increased in order to obtain the 4.5D. needed for clear vision at 40 cm. Now, if this is accompanied by a similar effort of convergence, a negative supplementary convergence effort must be made for fusion at the reading distance, and the harmony between the efforts of these two functions is disturbed. In 1910 and in 1911, the relative quantities of the two functions are the same. In 1910 there is harmony of effort, in 1911 there is no longer the latter. What, then, is the correction needed? In general, we say that the strongest convex sphericals that allow of clear vision, which in this case would be +1 or 1.25D.; in theory it should be that convex spherical power that represents the accommodation that is short, when the efforts of accommodation and convergence are equal or about .25D. or .5D. In practice it is something weaker than the strongest + sphericals accepted. A *full* correction is not needed, and even much less does any of the latent hyperopia need to be corrected.

MEDICAL PHARMACY.

THE N. F. PEPSIN PREPARATIONS.

By Dr. P. E. Hommell.

THE N. F. contains elixir digestive compound, elixir pepsin and strychnine, elixir of pepsin and bismuth, elixir of pepsin and iron; elixir cinchona, pepsin and strychnine; elixir cinchona, iron and pepsin; essence of pepsin, glycerin of pepsin, liquor pepsin, liquor pepsin aromatic, aromatic pepsin, compound powder of pepsin, lime juice and pepsin, pepsin wine, saccharated pepsin.

These preparations were introduced from time to time, chiefly to replace those of a proprietary character; most of them are, indeed, fine pharmaceutical products, but few of them are prescribed at the present time, as the enzyme pepsin is no longer the "fad" it used to be, and from a therapeutic standpoint I believe it was foolish to have ever introduced so many pepsin preparations in the N. F., especially those containing more than 10% of alcohol, which always impairs the digestive properties of the pepsin. I do not believe it was scientific to combine pepsin with other agents, as iron, bismuth, cinchona, strychnine, etc., as the association of the digestive ferment would have little action in promoting their absorption or effect. A mild bitter like colomba or quassia would be better with iron than pepsin, as it would tend to stimulate the gastric glands better to produce the normal amount of gastric juice.

The wine and elixir of pepsin, aside from the stimulating action of the alcohol contained in them, possesses but little medicinal value. The glycerite of pepsin is the best form to exhibit when pepsin is really indicated, as it sometimes is, in the case of lessened secretion.

Regarding aromatic pepsin, there can be no advantage to associate carminatives with digestive ferments. The most of them, beside volatile oil, contain tannic acid, which is incompatible; besides, carminatives do not digest the proteid elements of food. What pepsin wants is the presence of dilute hydrochloric acid so as to convert albuminoses into peptones.

Regarding the action of the compound elixir of pepsin: in it we find three enzymes, pepsin, pancreatin, diastase. The pepsin, we find, is rendered active by the acid contained in the elixir, but the effect of the pancreatin is retarded by the lactic and hydrochloric acid, it should be given combined with an alkali. Regarding the diastase in this preparation, it is doubtful if it has any action at all for digesting starch in the stomach. I could never obtain satisfactory results from diastase or the malt extracts for aiding the digestion of carbohydrates.

Concerning the essence of pepsin, N. F., I can find but little value in it, except for milk curdling purposes; it contains alcohol, wine and sugar, all of which undergo rapid fermentation in the stomach, disturbing the functions of digestion, and defeating the action of the pepsin. Better results can be obtained from the administration of the glycerite of pepsin, as it is by far the most scientific preparation, and the one the physician can depend on for activity in the treatment of stomach derangements.

The employment of pepsin as a therapeutic agent has been greatly overestimated. In some cases it has been a delusion and a snare. Tons of it have been wasted, and so has considerable money for its many useless preparations. The exhibition of pepsin in the field of therapeutics is indeed limited. In the presence

of dilute hydrochloric acid, not over two-tenths of 1%, it has a good effect in cases where there is a deficiency of gastric juice, such as is found in ulcer or cancer of the stomach, atonic dyspepsia, anemia, apepsia of infants, or a reflex vomiting; but for most cases of indigestion, dyspepsia or mal-assimilation so prevalent among the American people, resulting from sedentary habits or dissipation, it is valueless.

The administration in proper form of bitters, laxatives and alkalies gives far better results in the vast majority of cases cited, yet, scores of tablets, elixirs and compounds are exploited and prescribed containing pepsin and pancreatin as a panacea for all forms of indigestion, as it is the opinion of the medical profession and the laity that because pepsin is a normal constituent of gastric juice that it must certainly relieve, and even cure, no matter what form of indigestion or dyspepsia it might be.

Pepsin has its place in therapeutics and will accomplish some things if properly exhibited, but it will hardly do all that it is claimed to do in the advertisements we read. Clinical tests have proven that beyond all doubt, and I would therefore recommend that the National Formulary limit the pepsin preparations. Let us indicate to the profession those which possess definite therapeutic value, and omit those whose utility is doubtful.

I have found the following to be of therapeutic value and can recommend them to do good work: glycerite of pepsin, liquid pepsin, saccharated pepsin; the last named to be given in connection with dilute hydrochloric acid.

AN OLD-FASHIONED LINIMENT.

J. A. Burnett, in the *Physicians' Drug News*, cites the following from an old book, "Pain Killer, Truly Magical, for All Purposes and Places of Pain."

Morphine, 10 grains; chloral hydrate and camphor gum, each ½ ounce; chloroform, 1 ounce; nitrate of amyl, 2 drachms; oils of cloves and cinnamon, each 2 drachms; alcohol (best) to fill a 4-ounce bottle.

Dissolve the morphine in a little of the alcohol; rub the chloral hydrate and the camphor gum together, which forms a liquid, and add the dissolved morphine and others, the nitrate of amyl to be the last, as it is very volatile; then add 3 or 4 drops of strong sulphuric acid, which keeps the morphine in solution.

Dose—It may be taken on sugar in doses of 5 to 20 drops, and repeated in 30 minutes to an hour, according to the severity of any internal pain. For headache inhale from the bottle from nostril to nostril and apply over the pain.

Remarks—This, says Burnett, will stop any kind of pain almost immediately, and does seem at least to be magical by its quick action upon the nerves, relieving pain at once. I have applied it upon the eyeball (not in the eye but with the eye closed), holding the finger wet with it for a minute or two, which causes a counter or external irritation and would soon cause a blister, which proves its value as well as its strength and adaptation to the relief of pain in all situations. I can not speak of it too highly for slight pains or neuralgia of the eye. I shall use it upon painful teeth, neuralgia, and in fact in all pains anywhere, internally and externally. It will be hard to excel. The only objection against it is its cost (about 25 cents an ounce), when made in small quantities. It would still be valuable as a liniment if an equal amount of alcohol was added, which would make it cheaper, but to retain its magical power it must be kept full strength.

Recently I made up some of this liniment, but used morphine sulphate in place of morphine (alkaloid), oil of cassia in place of oil of cinnamon and aromatic sulphuric acid in place of the c. p. sulphuric acid. I started to shake it and it blew the cork and a part of the medicine out. I made another batch

but did not shake it for several days, but each time for several days when I uncorked it quite a lot of gas would be given off. I used this for various pains, headache and toothache, when there was a cavity in the teeth, and it gave remarkably good results. It would give relief in every case.

The good results with this remedy has caused me to make further inquiry, as I believe it is a compound worthy of investigating. If this compound is properly mixed how long should it stand before it should not blow the cork out by shaking the bottle? Or could something be added to it to prevent it from blowing the cork out? What is the difference in oil of cassia and oil of cinnamon? I notice quite a difference in the price. Could either one or all of the following be added to this compound; tincture capsicum, guaiacol, oil wintergreen, oil cajuput, oil wormwood, oil turpentine, oil mustard, tincture, aconite, menthol and tincture of iodine.

I believe every physician should do his own dispensing and keep on hand some good liniment for external use for the relief of pain. Make any suggestions you see fit regarding this formula.

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A CREOSOTE AND PHENOL PILL.

Peter Boa read a paper on this subject at the British Pharmaceutical Association. The following prescription has occurred in practice fairly often of late:

Phenol .....1 grain.
Creosoti .....2 minims.
Pil. excipient, q. s. ut fiat pilula.
Mitte xij talcs.

Mr. Boa explained that the phenol and creosote were heated with 2 grains of white wax in a squat pill-tube, corked, until the wax had melted, and the whole formed a clear liquid. After it had solidified, the mass was transferred to a mortar and gently mixed with sufficient powdered licorice-root to form a workable pill-mass. The resulting pill weighed about 7 grains. The patient was told that if the pill was too large to swallow comfortably it could be divided into two parts and so taken. The pills were found to be serviceable for the ailment for which they were prescribed. Mr. Boa gave the results of an attempt to reduce the size of the pill. Animal soap is the favorite excipient for creosote. Pilula creosoti B. P. C. contains:

Creosote .....1 minim.
Animal soap..... ½ grain.
Powdered licorice root.....2½ grains.

This gives a 4-grain pill for 1 minim of creosote; 8 grains for 2 minims. He also quoted the recommendations of the late Mr. Martindale and Mr. E. W. Lucas, and said that both these methods with his prescription necessitate a pill even larger than 7 grains. When the phenol and creosote are heated with the soap the mixture darkens in color to such a degree that one might confidently assume some reaction to have taken place, and the question arose: To what extent are active constituents chemically altered? There is no suggestion of any change when wax alone is used with the phenol and creosote, and this method was retained for use in practice. Experiment showed that by a slight increase in the wax a considerable decrease in the quantity of inert powder necessary could be effected. Finally, he decided that 2½ grains of white wax and 1 grain of powdered licorice root appear to be a suitable excipient to form 1 grain of phenol and 2 minims of creosote into a pill weighing about 6½ grains. Pharmaceutically the mass is homogeneous, plastic, and easily worked; medicinally the pill is firm in the stomach, and it presents the essential constituents unchanged and in full activity. The phenol, creosote, and wax should be incorporated with the powder gently and quickly. Energetic or prolonged beating introduces air, which makes the mass brittle.

Mr. Duncan said this is the only feasible way of making a satisfactory pill with such ingredients. He had found it a workable plan, but it is desir-

able that the pill should be divided into two. Mr. Boa, replying to a remark by Mr. Duncan regarding the use of cassia to roll the pills in, said it masks the odor of the creosote more than French chalk does, and possibly in swallowing the pill the cassia removes the objectionable flavor of creosote.

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AN AUTOMATIC FILTER

For filtering large amounts of solution from a precipitate of such a character that it passes readily through the stem of a separatory funnel, M. L. Hamlin has devised, and describes in *Jour. Amer. Chem. Soc.*, the apparatus illustrated herewith. It is, of course, only a modification of the inverted flask principle, but it possesses the advantage that it can be refilled without moving or unclamping any large piece of glass apparatus. It can be made from apparatus always on hand in the laboratory.

To set it up, a separatory funnel as large as possible is mounted on a ring stand over a filter funnel containing a folded filter in such a manner that the stem of the separatory funnel is a little above the vertex of the paper. A tube passing through a one-hole rubber stopper in the top of the separatory funnel is brought down so that its outer end is held at the level at which it is desired to maintain the liquid in the filter funnel. When the separatory funnel is filled, the stopper put in and the stop-cock opened, the solution runs into the lower funnel until it cuts off the air inlet through the tube to the upper vessel. When the level in the lower funnel has fallen sufficiently, a small amount of liquid is siphoned over into the upper one and the lower one fills up again.

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AN INTERESTING OBSTETRIC REMEDY.

The patent records of the United States contain a rather remarkable invention by one Amador Cardenas, of Mexico, relating to medicines for preventing the pains of confinement. The medicine is made as follows: Fowl's fat, 10 grams; vaseline, 10 grams; newly-cut pennyroyal, 20 grams. Put into a pan the ovaries of the hens and set the pan over the fire to melt the fat. To 10 grams of the fat add 10 grams of vaseline and again heat. As soon as the mixture is boiling add 20 grams of newly-cut pennyroyal, both the leaves and the stems of the vegetable being available. When well mixed and the juice of the pennyroyal well off, which may be noted by the light green color that the mixture acquires, take the pan off and remove the remainder of the pennyroyal, whereby an oily substance is obtained, which, when cold, takes a pasty consistency, which it is possible to preserve for one year in the open air and for five years if put into an air-tight flask or jar. Conjointly with this ointment there must be used an infusion of newly-cut pennyroyal. This beverage is prepared in the proportion of 20 grams of pennyroyal to 1 litre of distilled water, so as to obtain by means of the evaporation of the boiling water a light green tea. The success longed for, that is, the suppression of the pains attached to confinement, is secured by

the simultaneous use of these two recipes. The infusion must be taken in a dose of medium size cupful twice a day, on getting up and at bedtime, before or after meals. The ointment must be used for frictions on the abdomen and hips once a day before going to bed. These mixtures must be used during two months before the labor.

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THE BACTERIOLOGY OF TOOTHBRUSHES.

Under the title of "Bacteriophobia," the *Prescriber* (Edinburgh) publishes the following editorial:

It is admitted that a knowledge of bacteriology is essential to the framing of all rules of hygiene, and the elimination of the microbe is the fundamental principle in the prevention or cure of disease. But it is possible to carry this idea a little too far, and in a paper read at the recent meeting of the British Medical Association on the Bacteriology of Toothbrushes, this principle seems to have been carried to its limit. The authors find that toothbrushes become septic immediately after use; each bristle becomes an inoculation needle by which users may be vaccinated with such germs as flourish upon it. Tooth powders and pastes are useless to prevent this danger, even carbolic acid, one in twenty, is not enough. Formalin will disinfect a brush, but it softens the bristles. One per cent of tricresol will sterilize a brush, but this method appears to be unattractive, and the authors suggest boiling the toothbrush for five minutes before and after use, or using a new toothbrush each day. It is hardly to be expected that either of these methods will ever be adopted as a routine practice—life is too short. Besides, the authors take no account of the fact that the bristles of a toothbrush rarely, if ever, pierce the gums; if they do, blood immediately flows, and the thorough rinsing of the mouth practiced by all who cleanse their teeth should obviate any danger from germs lying on the toothbrush. Besides, the saliva itself is always antiseptic and inoculation of disease through a toothbrush should rarely, if ever, happen in ordinary circumstances.

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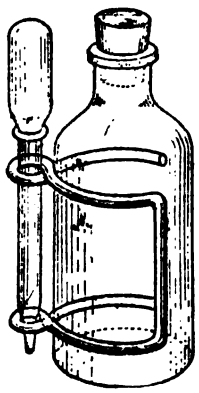
A NEW MEDICINE DROPPER CLIP.

Wood, in the *Journal A. M. A.*, describes a medicine dropper clip, illustrated herewith, that will fit any bottle



and hold any pipette. It can be made by anyone with the aid of a bit of wire and a pair of pincers, and will fit a bottle of any size. There are two loops, the top one sufficiently large to engage loosely a pipette of any size, while the lower one engages and supports the tip. The pipette can be easily removed and replaced.

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TREATMENT OF INSOMNIA.

It is a well-known fact that a full dose (0.6 gram) of veronal will in the majority of cases induce a quiet sleep, but the patient will often feel tired and stupid the following day. C. von Noorden has made the important observation that half the amount of veronal will be just as efficient if combined with 0.25 gram of acetphenetidin, and the patient will not suffer from subsequent depression. When there is pain or irritation, the following formula is unexcelled:

Codeinæ phosphatis	0.025 gram.
Acetphenetidin	0.25 gram.
Veronal	0.3 gram.

ELECTRO-THERAPY.

EDITED BY NOBLE M. EBERHART, A. M., M. D.
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THE ELECTRO-CHEMICAL (IONIC) TREATMENT OF CERTAIN GYNAECOLOGICAL AFFECTIONS.*

BY SAMUEL SLOAN, M. D. Glasg., F. R. F. P. S. Glasg.
Consulting Physician, Glasgow Hospital for Women, Etc.

Introductory Remarks.

TIME will not permit me to go fully into the subject of electro-therapy, but I do not regret this for several reasons. In the first place much of this treatment is purely empirical—that is to say, its value is based on experience only, and it does not therefore appeal to men of a scientific turn of mind. In the second place, much experience is required in order to get the best results from it, value at all indeed commensurate with the time and expense involved, and without this experience there is a danger of its gravitating into pure charlatanism. In the third place, the expense is too great if it is to be only occasionally employed; and for a fourth reason, the branch of electro-therapy I have chosen for our study tonight is not open to any of these objections. It requires little knowledge of electric science, is simple and not at all costly, whilst its application is based on strict scientific lines, so much so that, compared with other modes of applying electro-therapy, it may almost be said to be an exact science.

At the same time, whilst only an elementary knowledge of electricity is required for its profitable and satisfactory application, it is absolutely necessary that it should be carried out by those only who are, first, clinical physicians, and second, skillful in the diagnosis of gynæcological affections. This should make it acceptable to members of a society who show by their membership that they are specially interested in gynæcology, and presumably are experts in pelvic diagnosis, besides being at the same time practical physicians.

*Delivered at a meeting of the Glasgow Obstetrical and Gynæcological Society on November 22, 1911.

Present Position of Gynaecology.

I think those of you who are original members of this society will agree with me that during the past generation there has been a revolution in gynæcology. It was a medical, it is now a surgical, specialty. If not entirely surgical now, the medical part of it has resolved itself into a matter of probes and pessaries, of plugs and douches. These are all very good in their way. I do not despise them; but it is sad that, when these have been tried and have failed, there is usually left only the knife. As the pathologist comes in when the physician has failed, so here the surgeon takes the place of the pathologist and removes the physician's failures. Thus medicine, through the weakness of the physician, fails in attaining its legitimate aim; the success of the surgeon is an evidence of the failure of the physician; the triumph of the former is a reproach to the latter.

I think it is time we were making a change in our mental attitude towards pelvic disease. We must anticipate and deal more effectually with the pelvic organs of women in the early stages of disease in order to keep them out of the hands of the surgeon, whose museum they were surely never meant to adorn. True, the surgeon is no more to blame than is the pathologist for removing the

organs which have ceased to be serviceable, and he has, for the present at least, no need to fear that his occupation will soon be gone. There is a large harvest ripe for the reaper; there is perhaps a larger one fast ripening; whilst in many cases the canker has begun, and the road to the operating-theater will probably be a *facilis descensus*.

Tendency to Conservative Gynaecological Surgery.

Can we as a society of humane men and women do anything to help this steady march of pelvic organs towards extinction? You may reply that surgery is steadily becoming more conservative; that healthy or even partially diseased ovaries are not now removed so recklessly. I hope this is so, though only a few days ago I observed in an official document that an ovary had been removed for "inflammation," and that two had been removed for "ovaritis." There must have been good reasons in the minds of the surgeons for this; all the same, it is to be regretted. It is less deplorable, however, than what was the case not so many years ago.

This recalls to my memory an able address in advocacy of conservative gynæcological surgery delivered in Newcastle by Professor Pozzi, of Paris. When, in opposition to his views, a well-known gynæcological surgeon declared that, when one ovary was requiring removal for disease, his practice was to take away the sound one also "when he was at it," since it would in all probability become diseased. Any of you who were present on that occasion may remember the sensation which followed Professor Pozzi's application of the *argumentum ad hominem* to his critic, who, if not convinced, was certainly silenced.

I feel certain that it would be unjust to hint that the trend of late towards conservative surgery is due to timidity engendered in men by the cry of "Vote for Women." Let us hope it is due rather to increasing knowledge and increasing reverence for the distinctive organs of woman. Physicians are beginning, I find, to ask if all this operative work is to increase or to diminish in the future; and that this is not confined to pure physicians let me quote from an able and suggestive address delivered a few weeks ago by the president of the obstetrical and gynæcological section of the Royal Society of Medicine, Dr. Amand Routh:

> What (he says) is to be the future of gynæcology? Is it to continue to become more and more surgical? I think not. Is it not more than possible that in the near future some president of the section will give an inaugural address upon "Treatment Other than Operative in Gynæcology," and will base his remarks upon the wonderful discoveries being made in bacteriological, chemical, electrical and radiographical therapeutics? Even as it is, without considering these new aids in treatment, is there not a tendency nowadays to consider ourselves surgeons only rather than a happy combination of physician and surgeon, to advise an operation because it is the easiest way to treat a case, or to operate on the rush of both hospital and private practice without previous adequate constitutional preparation of the patient?

Good Results of Electro-Chemical Treatment.

These are at least as strong words as I have employed, and practically amount to what, before I had read them, I had intended to say. You will observe that amongst the four "wonderful discoveries being made" he has placed chemical and electrical in the middle. I may not have wonderful discoveries to tell you of, because many of you already know something of modern electro-chemistry, upon which has been based some of the work which for years I have been quietly doing in a corner of the gynæcological field; but since the results have often seemed to me wonderful, it is only natural that I should take advantage of your request to address you on electro-therapy in gynæcology; and if not to plead with you the cause of electro-chemistry, at least to state my case honestly, and, I trust, without undue bias.

If it is a Utopian idea to aim at the abolition of pelvic disease in women it

is at least a grand one; and it might well and fully justify our existence as a society. If this is an impossible consummation, however, let us do our next best, devoting, if not less energy to operations, at least more to prevention; and where in the nature of the case this is impossible to the earliest possible arrest of the disease.

I trust to point out to you one way in which this attempt may be made. If you decide to try this, to many of you a new form of treatment, it will make your work much more interesting if you study it from the scientific side, and with your permission, Mr. President, I shall attempt to convince you that it is founded on a sure scientific basis.

Some Elementary Principles of Galvanic Electricity.

I do not think you will be offended with me—at least, those of you who have not recently been working in the department of electro-therapy—if I take it for granted that you have forgotten in the multitude of your studies much of what you previously knew of electric science, and if I, therefore, in a few words recall to your mind some of the elementary principles of galvanic electricity. As the ion plays an important part in galvanism, and as upon it are based largely the laws of chemistry, I shall first ask your close attention whilst I try to give you a mental picture of this entity, upon which is based the treatment I am about to advocate.

Ions.

Let me define an "ion" as a particle of matter, generally small, moving or capable of moving in virtue of an electric charge. It may be as large as a pith ball when charged by an electrified body or as small as a molecule of SO_3 or an atom of hydrogen; and that there are such things as ions so almost infinitely small I hope to be able to prove to you.

All solutions may be divided into electrolytes and non-electrolytes—that is, into those which are, and those which are not, influenced by the galvanic current. Examples of the former are acids, bases and salts; of the latter distilled water, absolute alcohol and solutions in distilled water of the following amongst others—sugar, gum, starch, pure albumin. Why do these latter refuse to conduct electricity? Simply because they contain no particles electrically charged, whereas the electrolytes are teeming with free electrically charged particles, these being the carriers of the current, and therefore called ions, which simply means goers. The electric conductivity of solutions in which these ions are is only one evidence of their presence. The special behavior of solutions when tested for their osmotic pressure also reveals a difference. The amount of the osmotic pressure exerted by a solution is directly proportional to the number of particles in it—that is, to its concentration.

Osmotic Pressure Exerted by Solutions.

Suppose you place in a specially prepared porous pot a strong solution of sugar. Through an opening in a rubber stopper connect this by tubing of glass and rubber to a U-tube containing mercury; immerse the porous pot in water and await the result; you will find in a short time that the mercury in the U-tube will be pressed upwards by the expansion of the contents of the jar through the inrush of water till a balance is set up between the weight of the column of mercury and the pressure within the jar. Let this be noted and then replace the contents of the jar with a solution half the strength of the previous one. After a few hours the mercury will be found to have risen just half as high, the pressure being in direct proportion to the number of particles, or molecules, as it is in this case.

Take, on the other hand, the solution of a salt—say, NaCl—and compare the results as in the case of sugar. It will be found here that—instead of the half-saturated solution producing a rise of

the mercury only half the height of that resulting from the solution of twice the concentration—it will raise the column of mercury nearly as high as did the latter solution.

Now, what explanation of this have we? In the case of sugar all the particles are molecules, and these continue as molecules when the solution is diluted; whereas in the NaCl solution all the particles are not molecules, many of these having been split up—or dissociated, as the process is called—into separate particles—namely, sodium and chlorine ions, or sodions and chlorions, as they are called, for they differ in nature from what is known as sodium and chlorine. These ions may join and split up again as they rush about and come into collision with each other, so that imagination may picture the molecules breaking up into atoms, these rushing about in a free state, re-uniting with changed partners and darting off again.

In both kinds of solutions the molecules have no electric charge, whereas when they become dissociated each part acquires a charge of electricity—one atom plus and the other atom minus. When they become united into molecules they lose their electric charge, the resulting molecule being neutral, owing to the union of positive and negative charges. Now, as dilution proceeds a larger number of molecules become dissociated, and so the ions increase relatively to the molecules. During osmosis, each ion acts as a separate particle, adding to the osmotic pressure as much as a molecule does; and as the electric conductivity in fluids is proportioned to the number of its free ions, this is found to be greater in diluted solutions than would be the case if no increasing dissociation took place by increasing dilution.

Electric Conductivity of Various Solutions.

Let us take ordinary tap water, which in this town is, I find, almost as pure electrically as what is sold as distilled water. You will find that for a column of this water, six inches long and one inch in diameter in transverse section, you obtain from 50 volts about 0.2 ma. of current—that is to say, there are as many electrically charged particles in this water as will yield this amount of electricity. If the water were absolutely pure there would be no resulting current, since it would contain no electrically charged particles—that is, ions. Pure water is, therefore, a non-electrolytic fluid, its resistance to the flow of electricity being practically absolute.

Dissolve some sugar or starch in this tap water and with a similar column and the same voltage you will obtain no more, probably somewhat less, current, since the material dissolved has occupied some of the space previously occupied by the water with its electrically charged particles. Dilute this fluid with an equal quantity of water, and you get practically the same amount of current as before the sugar was added. The conclusion thus is that any current obtained is solely due to what ions there may happen to be in the water, none of the sugar having become ionized.

Now take the case of a similar column of a saturated solution of NaCl, and you will find that the amount of current obtained through it from the same voltage is enormous compared to that through a similar column of the water in which it is dissolved. Observe from Table I what

TABLE I.—*Currents in Columns of Solution of NaCl from 50 Volts.*

Saturated	=36	per cent.....	600 ma.
½	=18	per cent.....	575 ma.
¼	= 9	per cent.....	500 ma.
⅛	= 4.5	per cent.....	350 ma.
1/16	= 2.25	per cent.....	240 ma.
1/32	= 1.125	per cent.....	140 ma.
1/64	= 0.56	per cent.....	80 ma.
1/128	=	.....	45 ma.
1/256	=	.....	24 ma.
1/512	=	.....	13 ma.

I have found to be the results of continued dilution in this case. You see that each solution gives the indication of containing more free ions than would be expected from the amount of the dilution; especially is this the case in the

more concentrated solutions. This relation diminishes, however, as the dilutions increase, you will observe, till a dilution of about one per cent is reached. By this time practically all the molecules have become dissociated, and with further dilutions the amount of current is practically directly proportioned to the amount of concentration.

Dissociation of Molecules in Different Dilutions.

Suppose in the strong solution there were in every 100 original molecules 20 dissociated, then the total number of particles for each 100 molecules would be 20+20+80=120 particles in all. If this be diluted with an equal quantity of water, then for each original 100 there will be left in the diluted liquid 20 separated ions and 40 molecules. Suppose that by the further dilution 10 of these molecules become dissociated, this will give of separate particles 20+10+10+30=70, and of these 70, 40 will be ions. Thus, to influence the osmotic pressure there will be 10 more particles than were in half of the original solution; whilst there will be the same number of ions as there were in the more concentrated solution; and so the same current can be obtained from the weaker solution as was obtained from the stronger if the same voltage were used.

This relative increase in the number of free ions, by further dilution, continues, as I have just remarked, till we reach the stage where there is about one per cent of the saline in the solution, when practically all the molecules have evidently been dissociated; not permanently so, though at no time can there be more than the merest fraction of the molecules undissociated, since there will be occasionally reunions, but the free flight space has so much increased that these are less likely to occur. These reformed molecules, however, will be almost immediately broken up owing to conflict with some flying ions.

You see now how the conclusion is forced upon us that a saline solution contains, even in its most concentrated form, a large number of ions; and that by dilution the number of these has become relatively increased; *quod erat demonstrandum.*

To Arrhenius, of Sweden, we owe the placing of the dissociation theory of electrolysis on a sound experimental basis. To our own Faraday we owe the laws of electrolysis; whilst to Professor Leduc, of Nantes, belongs the honor in a pre-eminent degree of applying these discoveries in the service of medicine. Leduc is a man of transparent modesty, he is a charming personality, and it has been a pleasure to me to know him. For fuller information on the subject I commend to you his book on "Electric Ions and Their Use in Medicine."

Galvanic Current.

We have seen how a galvanic current passes through in electrolytic solution in virtue of the ions existing in it, no ions meaning no electric current. I should like to point out, however, that not only is this the case, but the energy which has come from the battery is derived from ions existing in the cells of the battery.

If you place a piece of zinc on the one side of the tongue and a piece of copper on the other, you will find—if these plates are connected by means of copper wire with a galvanometer interposed in the circuit—that a deflection of the needle takes place as soon as the metals are placed in the mouth. Taking the ions of the saliva as NaCl only, you will observe from the diagram what chemical change takes place in the mouth when the circuit is completed; and if you try the experiment upon yourselves you will find that, with the formation of HCl at the zinc plate, an acid taste is distinctly felt at that portion of the tongue on which the zinc rests.

The cause of the migrations of these ions between the two plates, as you will

see from the diagram, is that the copper plate has—as represented in the diagram—negative electrons attached to it, and the zinc plate positive electrons. These electrons do not travel across the fluid to neutralize each other; neither do they pass round the metal circuit in order to become neutralized; but they remain fixedly attached to the plates, indicating a state of elastic electrical tension existing between them—that is to say, they have relatively to each other a difference of potential. The electric charge on them acts by attracting or repelling the different ions in the saliva; the positive ions being attracted to the negative copper plate, and the negative ions attracted to the positive or zinc plate.

As I have said, these do not, when they reach these plates, influence the electric charges of the plates by neutralizing them, but may be said to accumulate at the junction of the wire and the plate—positive electrons at the junction of the copper plate, and negative electrons at the junction of the zinc. Thus is made plain what is difficult at first to understand—that, whilst the copper plate is negative, it is in contact with the positive pole of the cell, the zinc plate, which is positive, being in contact with the negative pole of the cell. So long as the wires attached to the plate remain unconnected the electric charges on each of them—plus and minus—can not unite. This is shown in the diagram, whilst there is also depicted the circuit completed through a galvanometer.

When the circuit is completed these electrodes are capable of revealing their presence in two ways—first, by heating the connecting wire if it is thin enough or if the battery is powerful enough; secondly, by being able to deflect the needle of a mariner's compass if the wire through which the current is passing is held over or under it. The direction of the deflection of the needle from the north pole depends on the direction of the current at the time. The current has thus direction; it has polarity, and so we call the terminals of the wires poles.

Galvanic Battery.

This is the principle of all galvanic cells, and in order to increase their power we join them into a row, connecting the minus pole of the one to the plus pole of the next in order, and so obtain an electric pressure in direct proportion to the number of cells we employ. This electric pressure we call electro-motive-force, and we calculate it in volts, each cell being equal to about one or one and a half volts, according to its construction.

For ionic purposes from 20 to 40 cells are required, yielding a total voltage of from 20 to 50. This voltage is not galvanic electricity; it is electric potential or static electric pressure. It becomes current, however, when the separated ends are joined, and it can then display its effects, thermic, magnetic and electrolytic.

The amount of current which a given voltage can generate is determined by the difficulty or friction it has to overcome in order to complete the circuit. If there be much difficulty, or resistance as we call it, then the yield of current or actual (kinetic) energy is less, and *vice versa*. The ratio is $\frac{E}{R} = C$, where E is the electro-motive force, R the resistance, and C the current. As E is calculated in volts, so R is calculated in ohms, the current being measured in amperes, and a coulomb being one ampere-second. For ionic medication, however, our galvanometers register thousandth parts of an ampere—that is, milliamperes.

Through some conductors of electricity the current passes with very little difficulty—silver and copper, for instance, if pure and moderately thick, have extremely little resistance; whilst others, such as platinum and the element carbon, especially if of a very small cross section, cause a very considerable amount of

resistance, and therefore of heat. This, in the case of the platinum, is utilized in the galvanic cautery; whilst carbon is employed as graphite to restrain the current, where, with the given voltage, the amount of current would be in excess of the requirements. When so used it is called a rheostat.

The choice of a suitable battery and a suitable rheostat is not a very important one. Convenience and price may be permitted to determine this. I find the Leclanché cells and the graphite rheostats satisfactory, though the latter are less safe than more expensive ones, for the gradual and steady increase of the current by the rheostat is apt to suffer if this is at all out of order, and for the comfort of the patient and the peace of mind of the medical man sudden increase or decrease of the current is to be deprecated.

Question of Valency.

We have hitherto been considering ions as having one electron charge only. As you will see from Table II., some

TABLE II.

Element.	Atomic weight.	Valency.	Electro-chem.-equiv.
H	1	1	1
O	16	2	8
Cl	35.5	1	35.5
I	127	1	127
Cu	63.5	2	31.7
Zn	65	2	32.5

ions carry two; and though others carry three or more the chemicals likely to be used in ionic medication are either monovalent or divalent—that is, they carry one or two electrons. They are therefore called monads and dyads. From this table you will see that the valency of oxygen is 2—that is, it carries two electrons. It is thus, in the case of water, able to neutralize the two electrons of H_2; and so in $CuCl_2$ the Cu is divalent so as to neutralize the two Cl electrons, and thus form a neutral molecule. This, you will find, must be recognized when calculating the total of a substance transferred by ionic penetration.

Kations and Anions.

Note that the electrons are given up at the poles only, where, having lost their electric charges, they assume their ordinary qualities—two atoms of the same element uniting to form an ordinary molecule of that substance as we know it in nature, or they may as atoms attach themselves to one or more of the atoms of the molecule water, and thus cause decomposition of the water. So great is the attraction of the hydrogen and oxygen in water that to tear them asunder in this way requires nearly two volts. These electrons are discharged always as one atom of electricity, as they are considered to be, or as a multiple of one; never a fraction of one. They are therefore indivisible, like the atoms of ordinary matter.

Those ions which, being charged with positive electricity, and therefore traveling towards the negative pole, are called kations—that is, cathode travelers; the other anions, or anode travelers, seeing that they migrate in the direction of the anode or positive pole. That is, these ions are repelled from the pole which has the same sign as themselves and are attracted to the pole of opposite sign. The kations are called electro-positives and the anions electro-negatives. You will find in Table III. examples of some of these; those only, however, in which we are at present interested.

TABLE III.—*Examples of Kations and Anions.*

Electro-positives (kations.)		Electro-negatives (anions).
Cu.	Cocaine.	Cl.
Zn.	Strychnine.	I.
Quinine.	Atropine.	Salicylic acid.
		Sulphurous acid.

Calculation of Ionic Penetration.

You are all familiar with what is meant by atomic weight in chemistry, and I have pointed out that some atoms carry one, some two, electrons or atoms of electricity. Now it will be obvious that twice as much electricity will be given up at the electrodes in the case of the latter as in the case of the former; and,

according to the laws of electrolysis, the amount of ions displaced is directly proportioned to the amount of current registered during the process.

The electro-chemical equivalent, therefore, will be found to be the atomic weight divided by the valency—that is, by the number of electrons with which the ion is charged. In the case of the monads the electro-chemical equivalent will be the same as the atomic weight; whereas in the case of the dyads the electro-chemical equivalent will be the half of the atomic weight. Now, as one coulomb, that is one ampere second, is capable of displacing 0.0000104 of one gramme of hydrogen, or this amount multiplied by 108 in the case of silver—this being the atomic weight of the latter—and as the total amount of ions displaced or transferred into the tissues is equal to the product of the number of coulombs of electricity passed, multiplied by the electro-chemical equivalent of the substance, multiplied again by the amount of hydrogen displaced by one coulomb, the total amount of ionic penetration can thus be calculated.

For example, the total weight of the ions introduced from 20 ma. for 15 minutes, that is, from 18 coulombs—equals

$$0.02\times60\times15\times0.0000104\times31.7\times15.5 \text{ (grains in 1 gram)} = \ldots\ldots\ldots 0.1 \text{ grain.}$$

This gives no idea, however, as to the number of ions which this weight may imply, and before we can even in imagination conceive of this it is necessary that we should know the size and weight of the ultimate atoms of matter. All atoms may be considered to be of the same dimensions—at least, that is the present belief—and this dimension is given as 10 raised to the power of minus 8 of a centimeter (10^{-8} cm.); that is to say, a ten-millionth part of a millimeter. The weight of an atom of hydrogen is 10^{-25} of a gram—that is, the ten-quadrillionth part. The weight of an atom of oxygen will therefore be sixteen times that, the weight of an atom of copper three times that, and so on, being the weight of an atom of hydrogen multiplied by the atomic weight of the particular substance. It may be interesting to know that the weight of an atom of electricity has been calculated as the 700th part of the weight of an atom of hydrogen and its linear dimension about the 100,000th part.

Relative Numbers of Ions and Germs.

You will observe that I have calculated the medicinal dose of copper ions in gynæcological practice as about one-tenth of a grain. It may appear to you that the mountain having been in labor a very small mouse has been born; but think of what this small fraction of a grain means, if you are capable of thinking in such minute fractions. It means 1000 millions of millions of millions of ions of copper. It is even more difficult to grasp the meaning of this than to appreciate the practically immeasurable distances of some of the stars in infinite astronomical space.

Now the object of the introduction of these ions into the tissues in gynæcology is the destruction of the armies of the septic fiend. You are accustomed to look on these microbes as the infinitely little, and so you may, perhaps, be able to imagine what this fraction of a grain may do in this warfare when I tell you that it would be capable of introducing into each of a million million millions of streptococci a garrison of a thousand ions with abundance of elbow-room for each ion.

Comparison of Electrolysis and Ionic Medication.

Some of you are more familiar with the term electrolysis, in the application of electricity to gynæcology, than with ionic medication. These two terms signify the same thing from the point of view of physics. For therapeutic application, however, they are exactly opposite. In electrolysis the aim is to utilize the effect of the ions when they reach the electrode; in ionic medication, on

the other hand, it is the ions which leave the electrode that are utilized in the treatment.

The application of chemicals to any part of the mucous membrane or the skin results in the absorption of the substance dissolved; this we might call osmotic diffusion. This process is also in action during the application of ionic medication, but with this difference, that whilst in the case of the former the fluid passes into the capillaries and lymph channels as soon as it has reached them, and then finds its way into the general circulation, in the case of ionic penetration besides this there is a steady march of the ions right through the tissues—not going round the cells but straight through into the protoplasm of the cells and remaining there. This it is which gives the ionic treatment its peculiar therapeutic properties.

The choice of the suitable pole for the active electrode is of importance both in electrolysis and in ionic medication. In the former, if astringent and caustic effects are desired the positive electrode must be applied. If softening and breaking down are required the electrode applied to the negative pole must be the active one. But in either case the effect is due not to any extrinsic ion but to the ions of the tissues.

In ionic medication, on the other hand, it is more a question of the chemical to be employed, since to it is practically wholly due the effect produced. The decision as to the pole to be employed is determined simply by the electric charge on the ion selected. Electro-positives are driven into the tissues by the positive pole, as might be inferred; electro-negatives from the negative pole. In electrolysis a non-electrically soluble electrode is employed, such as platinum or carbon; in the case of ionic medication the electrode is the substance whose ions it is intended to introduce where this is possible.

Physics and Electrolysis.

I show you now a series of U-shaped tubes illustrating the physics of electrolysis, osmotic diffusion and ionic penetration respectively.

In the tube containing the solution for illustrating electrolysis there is contained in solution iodide of potassium, starch, and a few drops of phenol-phthalein, the object being to prove the migration, in the solution, of the ions of iodine to the positive pole and of the potassium ions to the negative pole. When the iodine becomes un-ionized by contact with the positive pole it will produce the strong blue color of iodide of starch. When the potassium yields its electrons at the negative pole, being unable to exist in water as a metal, it will combine with hydroxyl extracted from the water molecule, setting the remaining atom of hydrogen free as a gas, and changing the phenol-phthalein into a distinctive red color, indicating the presence of an alkali.

Osmotic Diffusion.

In the case of the U-tube containing the solutions to illustrate osmotic diffusion solution of common salt may be introduced into the tube, and on the top of this in each limb say a solution of methylene blue to the extent of about one inch in depth. If these added colored solutions are denser than the solution of salt in the tube they will almost at once be diffused down the column of water by gravity. If of exactly the same molecular concentration they would practically never change their position. A degree of concentration less than the salt solution is therefore chosen, and, given sufficient time, complete diffusion will result.

The next U-tube contains the same as the middle one, but to each limb has been attached an electrode from a battery of cells. The experiment in this case was begun just before the hour of meeting in order that sufficient time might elapse to show the effect produced.

(To be continued.)

X-RAY IN STATUS LYMPHATICUS.

Rochford, in the *American Journal of the Medical Sciences*, thus enumerates the good effects of this treatment:

1. Decrease in size of the hyperplastic thymus, with the disappearance of the cough, stridor, and asthma.

2. Decrease in size of the enlarged spleen and lymph nodes.

3. The exhaustion and general feebleness of constitution give place to normal conditions of health and strength, and physical and intellectual growth are greatly stimulated.

4. A rapid disappearance of the marked lymphocytosis which characterizes this disease.

5. Excessive physiological action of the thymus gland is controlled. The slight return of the symptoms, stridor, cough, etc., at intervals of three or four months in one of his cases, and the quick control of these symptoms by one or two exposures to the X-rays, indicate that the gradual regeneration of the thymus following the X-ray treatment may be accompanied by a gradual reproduction of the same pathological conditions, hypersecretion, etc., which were present before the treatment was begun.

Since the above remarkable results are brought about by the action of the X-rays on the thymus gland, it would appear that the excessive physiological activity of the thymus gland bears the same relationship to status lymphaticus that excessive activity of the thyroid gland bears to exophthalmic goitre. One seems justified in inferring from the above facts that the exciting cause of true status lymphaticus acts primarily on the thymus gland, commonly producing marked hyperplasia of this organ with an increase in or perversion of its internal secretion, and that this increased or perverted secretion is responsible for the general hyperplasia of lymphoid tissues, the lymphocytosis, and general feebleness of constitution which occur in this disease. This inference seems justified by the facts above noted, that the general hyperplasia of lymphoid structures, as well as all of the other symptoms of status lymphaticus, disappear when the X-ray reduces the thymus to normal size and, perhaps of more importance, to normal functional activity.

If the above hypothesis be true, that under pathological conditions an excess or perversion of the internal secretion of the thymus may produce hyperplasia of the thymus gland itself and of lymphoid tissues in general throughout the body, the inference seems plain that the normal thymus gland, which is at the height of its functional development in intrauterine and early extrauterine life, exercises a preponderating or controlling influence over the lymphoid tissues of the body, their functional capacity being increased or diminished by the increase or diminution of the internal secretion of the thymus. This hypothesis is in accord with the increased activity of lymphoid tissues during early life, and with the gradually diminishing activity of these tissues in later life, as the physiological atrophy of the thymus gland gradually diminishes its internal secretion.

ELECTRIFICATION IN VARICOCELE.

W. H. Willcomb treats of this subject in the *Physicians' Drug News*. In meeting this class of disease, he says, we have several conditions claiming our attention. In varicocele we have, first, a weakness of the veins and arteries. Second, an enlargement often complicated by inflammation of adjacent tissues. In many cases the lesion is caused by a lack of nerve vigor, and in other instances it is a result of local disturbances.

It is next to impossible to lay down a course of technique to be applied to every case. The treatment must vary to meet individual needs.

Electrification is the best agent we have in either of these conditions, but is not a safe one to employ haphazard. Until the medical profession comprehends the fact that electrification is a powerful therapeutic adjunct, capable under proper administration, of great good, and yet at the same time, if abused, may become dangerous, there will be many failures to secure desired results. Too much can not be said on this line. A very large per cent of the physicians in active practice consider electrification as a mild sort of remedy, having an uncertain action and which is to be listed among the "simples." Any physician who holds these ideas, or who is acquainted with this subject has no business to attempt to employ its powers in varicocele, or any other disease of importance. The employment of galvanization in such conditions by a novice is as criminal as the administration of strychnine or hydrocyanic acid by a layman.

With the supposition that the operator is fully familiar with the principles underlying electro-therapeutics, this article is submitted. I have no comments to offer, realizing that to some extent the methods of administration are a departure from more common practices. I have only this to say, that they have met with almost unvarying success.

In a case of simple varicocele, I am governed in the first stages of treatment by the history of the case. I have found several cases where the entire trouble was due to a lack of nerve tone. With these patients I employed at first faradization with a foot plate, and had electrodes, using a mode at considerable tension, with rapid interruptions, and as strong as can be employed without inconvenience to the patient. Where the physician has it at his command, the true sinusoidal mode is best for this purpose. Continue these treatments from fifteen to thirty minutes daily for two or three days. I frequently follow these the second day by local galvanization, using a sponge electrode, sufficiently large to cover the lesion, using positive pole; for inactive electrode I employ usually a large foot plate. Beginning at 0, increase gradually until as strong as can be comfortably borne by the patient. I find frequently that by keeping both electrodes well moistened I can use from ten to twenty milliamperes without discomfort, though the batteries should be well sustained that mode be constant, as fluctuations in strength, which are often due to poor condition of battery solution, or to poor contacts, are sure to be unpleasant. I seldom find this method to fail, but have met a few obstinate cases; when I come in contact with such and find that after two or three treatments as outlined, I have achieved no practical results, I resort to the injection treatment.

Thoroughly cleanse surfaces involved, so as to be as near to aseptic as possible, employing sterilized hypodermic syringe, inject from one-half drachm to drachm and one-half of sterilized 1.5% solution common salt (strength of solution can be varied at discretion of operator). Withdraw syringe and employ galvanic current as outlined above. Where there is much sensitiveness and current is not readily endured the following solution can be used to good advantage on the positive electrode:

Sulphate morphine	4 grains.
Cocaine hydrochlorate	10 grains.
Distilled water	2 ounces.

In rare cases, three or more fine gold plated or platinum needles may be used to advantage in place of sponge electrode, though my personal experience has been in favor of the large electrode and increased current strength. The sittings should be as continued as possible, and as frequent as the condition of the patient will allow.

THERAPEUTIC BRIEFS.

Pharyngitis, Chronic.—

Tinct. myrrhæ	15.0	grams.
Tinct. pimpinellæ	2.5	grams.
Ol. menth, pip	5	drops.

M. Sig.: Fifteen to twenty drops in a glass of water for a gargle.

Laryngismus Stridulus.—

Potassii citratis	1	drachm.
Syrupi ipecac	2	fl. drachms.
Tinct. opii deod	12	minims.
Syrupi simp	2	fl. drachms.
Aquæ	1½	fl. ounces.

M. Sig.: Teaspoonful every two hours for a child of two years.

Ozena.—

The following application may be used for deep ulcerations in ozena:

Thymolis iodidi	2½	ounces.
Olei ricini	2½	ounces.
Collodion	2½	ounces.

M. Sig.: To be applied on pledgets of cotton wool.

Flatulence.—

Betanaphtholis	1	drachm.
Magnesii carbonatis	1	drachm.
Carbonis ligni	1	drachm.
Saccharini	¼	grain.
Ol. menth. pip	2	drops.

M. Div. in pulv. No. xv.

Sig.: One before meals.

Impetigo.—

In impetigo of old people, Neligan recommends the following:

Tinct. ferri chloridi	½	fl. ounce.
Magnesii sulphatis	2	ounces.
Tinct. calumbæ	1½	fl. ounces.
Infus. quassiæ	18	fl. ounces.

M. Sig.: Wineglassful every morning.

Myalgia.—

The following liniment well rubbed into the skin will be found useful:

Tinct. belladonnæ	1½	fl. drachms.
Tinct. aconiti	6	fl. drachms.
Tinct. Opii	2	fl. drachms.
Linim. Saponis	6	fl. ounces.

M. Sig.: Poison. To be used externally and only as a liniment.

Icterus Neonatorum.—

Wiederhofer recommends the following for the pyemic jaundice of the newborn:

Quininæ sulphatis	1½ to 3	grains.
Acidi sulphurici dil	3	minims.
Syrupi curantii	2½	drachms.
Aquæ destillatæ, ad	2½	grains.

M. f. mist.

Sig.: A teaspoonful every two hours.

Chloasma.—

When the pigmented spots are not due to organic disease or to silver deposits in the skin, they may be temporarily removed by one of the following:

Hydrargyri chloridi corros.	5	grains.
Zinci sulphatis	½	drachm.
Plumbi acetatis	½	drachm.
Aquæ	4	fl. ounces.

M. Sig.: Lotion. Apply morning and evening.

Chilblain.—

Ichthyolis	1	gram.
Resorcini	1	gram.
Acidi tannici	1	gram.
Aquæ dest	50	grams.

M. Sig.: Apply at night.

Camphoræ	0.5	gram.
Ceræ albæ	20.0	grams.
Olei lini	40.0	grams.
Bals. peruvianæ	0.75	gram.

M. F. ung.

Iodi (vel ichthyolis)	0.2	gram.
Collodion	20.0	grams.

M. Sig.: Apply once daily.

Trichinosis.—

Gastric lavage should be done as soon as possible after the ingestion of the infected meat. The bowels should be moved as promptly as possible by calomel or castor oil. One teaspoonful of glycerin per os hourly, or 2 liters of a 33-per cent glycero-aqueous solution per clysma.

Mucil. acaciæ	25	grams.
Extr. glycyrrhizæ	8	grams.
Benzeni	6	grams.
Aq. menth. pip	120	grams.

M. Sig.: Shake. One teaspoonful every two hours.

NOTES AND MISCELLANY.

THE MALARIAL ANEMIC.

WHETHER or not the much-maligned mosquito is the intermediate host of the plasmodium malariæ, certain it is that the campaign waged for this insect's extermination has not entirely ridden the country of the blood infection for which it is responsible. In addition to the chills, fever and sweating characteristic of the acute forms of the disease, which require immediate antidotal treatment, the physician must recognize the serious injury to the blood itself, due to the invasion and actual destruction of the red cell by the paludal organism. After the subsidence of the acute symptoms, a distinct aglobular anemia is the result, and unless this is corrected, a reinfection is extremely likely. To prevent this and to avoid the development of a chronic malarial toxemia, a vigorous building campaign should be instituted just as soon as the febrile movement is controlled. For quick and efficient reconstruction of the partially disintegrated red corpuscles and to encourage the rapid formation of new and functionally active erythrocytes, Pepto-Mangan (Gude) is especially serviceable. Steady treatment with this potent hematinic, for a period of several weeks, is practically certain to restore hemic integrity and place the patient in a position to ward off fresh infection, or quickly throw it off if invasion occurs. When the physician believes that arsenic is needed in the after-treatment, this drug can be readily added to Pepto-Mangan (Gude) preferably in the form of Fowler's solution.

He—"I found a moth in my winter overcoat."

She—"Wasn't the overcoat rather large for it?"

THE APPETITE IN TUBERCULOSIS.

In view of the fact that hypernutrition, or so-called forced feeding constitutes one of the important indications in the treatment of many cases of tuberculosis, more than ordinary attention must always be devoted to maintaining the appetite. Unfortunately, many of these patients have an aversion to the very foods which are best adapted for repairing and resisting the ravages of the disease. It is here that Gray's Glycerine Tonic Comp. serves one of its most important purposes, by reason of its notable capacity to awaken a deficient appetite in a perfectly natural manner. It not only possesses the desirable feature of great palatability, but through its tonic properties, it never fails to impart just the right tone to the digestive organs. Thus the effects are so much more permanent and far-reaching than are obtained from ordinary stomachics, that not only are larger quantities of nourishment freely taken by the patient, but a correspondingly increased amount finds its way to the remote tissues.

A MODERN MOTHER.

"Mamma," said little Dorothy, "I want some water to christen my doll."

"No, dear," replied her mother, "it's wrong to make sport of such things."

"Then I want some wax to waxinate her. She's old enough to have something done."

MICAJAH'S WAFERS.

In all diseased conditions of the vagina and uterus, Micajah's Wafers are of distinct value. They exert a continuous action on the involved mucous membranes. Free samples and full literature will be sent on request.

GLANDULAR TROUBLES.

There is no agent in materia medica that affords such prompt and decided curative action in all forms of glandular troubles as does Burnham's Soluble Iodine. When it is remembered what part iodine plays in the internal secretions, this result should be expected. A free iodine is nature's own treatment, and where the system fails to supply the lack is where a free iodine product, like Burnham's, comes to the rescue.

In goitre it should be used hypodermically as well as internally; 10 to 15 drop doses, three times daily. Results in these cases are satisfactory in the highest degree.

In glandular conditions of children results are always most pleasing, and it should be given in doses of 2 to 5 drops, 4 to 6 times a day in a wine glass of pepsin and water for children from 1 to 4 years, increase according to age, and after several days diminish dose and give some form of iron. A much larger dose in some cases is warranted than in others.

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THE AMERICAN HOSPITAL ASSOCIATION.

The American Hospital Association is composed of hospital trustees, managers, trustees, contributors and officers of associations founded to promote the interests of organized medical charities. It aims to promote economy and efficiency in hospital management, to educate the public regarding hospital needs, to disseminate information regarding every phase of hospital work, to assist those who are carrying hospital burdens, and in every possible way to improve the care of the sick.

During the dozen or more years of its existence, it has given much study to hospital construction, called attention to defects and mistakes, pointed out causes of difficulties and methods of improvement, thereby rendering a distinct service to hospitals recently constructed, and to the hospitals of the future.

It has devoted time and earnest thought to improving methods of bookkeeping and accounting for hospitals, and has recommended a system of uniform accounting and reporting applicable alike to larger and smaller hospitals, thus aiding materially in bringing about more systematic and business methods in its own particular field.

Keeping in view the interests and needs of hospitals of varied sizes and conditions, of the nurses, and of the public, it has given a serious and prolonged study to the training of nurses, and has recommended a course of training which has been adopted by large numbers of hospitals in the United States and Canada, thus doing much to standardize the work of that important department, and render it more efficient.

Questions regarding hospital finance, and prevention of waste, medical organization, management of infectious diseases, the out-patient department, social service, municipal needs and policies relating to the care of the sick, hospital dietaries, the best method of purchasing, the training of superintendents and heads of departments, hospital accidents, and a great variety of similar practical subjects, important to all hospitals, have been discussed, so that the experience of one hospital might be made known and used for the benefit of all.

The American Hospital Association welcomes to its membership and councils the representatives and supporters of the smallest hospitals, as well as those of larger institutions. It needs their support and assistance, and invites the active coöperation of every hospital in the United States and Canada.

Believing that the establishment of a central bureau of hospital information in which would be filed plans and information regarding construction and every phase of hospital information, would be a distinct help and benefit to hospitals in

general, the American Hospital Association has committed itself to that object and is now working diligently to that end. The addition of several hundred new members to the already large and growing list is necessary before the important object can be realized.

Every member of the Association can help bring the goal of the hospital worker's ambition one step nearer, by securing annually one or more members for the Association.

Physicians are earnestly invited to assist in this undertaking to coöperate in promoting the usefulness and general welfare of the organization and to participate in the benefits to be derived by becoming a member of the American Hospital Association. Those who can not take an active part in the work the Association is doing, can greatly assist by retaining their membership by payment of the annual fee, giving the Association the benefit of their name and influence.

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DOCTOR, REMEMBER!

Dioviburnia is the most efficient uterine tonic, alterative, anti-spasmodic and anodyne, indicated in anemia, parturition, leucorrhea, menorrhagia, subinvolution, dysmenorrhea, miscarriage, vesical tenesmus, diarrhea, dysentery, chlorosis, ovaritis, cholera morbus, climacteric diseases, endometritis, uterine engorgement, metrorrhagia, prolapsus uteri, threatened abortion, puerperal convulsions, vomiting of pregnancy, relaxed condition of the uterus.

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MEETING OF UROLOGISTS.

The North Central Branch of the American Urological Association will meet in St. Louis on February 5th, 6th and 7th, 1912. It is announced that the first and last days are to be devoted to clinics and Tuesday to scientific programs; both features promise to be of exceptional interest. The St. Louis urologists are planning for a large attendance and are desirous that the invitation reach all who are interested in uro-genital diseases, whether specializing or not, and with it the assurance of a cordial welcome.

The headquarters of the meeting will be the Jefferson Hotel, 12th and Locust Streets, where the scientific sessions will be held. A dinner and entertainment will be given to the members on the evening of the 6th. Hotel reservations may be made through Dr. Bransford Lewis, 1050 Century Building, St. Louis.

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INTERNATIONAL RED CROSS CONFERENCE.

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately $9,000, divided into nine prizes, one of 6,000 rubles approximately $3,000; two of 3,000 rubles each, and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.

2. Portable (surgeons') washstands, for use in the field.

3. The best method of packing dressings for use at first aid and dressing stations.

4. Wheeled stretchers.

5. Transport of stretchers on mule back.

6. Easily folded portable stretchers.

7. Transport of the wounded between warships and hospital ships and the coast.

8. The best method of heating railway cars by a system independent of steam from the locomotive.

9. The best model of portable Roentgen apparatus, permitting utilization of X-rays on the battlefield and at first-aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The general exhibit is again divided into two parts. The first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any articles having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventive measures in campaign. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.

2. Field apparatus for the disposal of wastes.

3. Shelter such as portable huts, tents, and the like, for hospital purposes.

4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the chairman, exhibition committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore, the last mentioned section of the exhibition should make an appeal to them.

THE TREATMENT OF CONVULSIONS IN INFANTS.

By Harry Teldesley, M. D.

One of the most frequent morbid conditions encountered in the treatment of the diseases of child life is convulsions.

The treatment of convulsions very naturally resolves itself into two indications—the removal of the cause and the institution of those measures which relieve the congestion of the brain. A study of the case in hand will reveal the causative influences and suggest those remedies that are indicated to remove the cause. Where the stomach is full of indigestible foods it must be emptied, and in a like manner other remedial measures must be addressed to the removal of the cause.

It is highly important that the physician go to work with the most earnest efforts to relieve the convulsive seizure. The inhalation of chloroform is useful in some cases. It should be given until there is no convulsive movement. I put all infants as soon as I see them in a bath of warm water, and give them a dose of Neurosine. This agent speedily overcomes the congestion of the brain and the child falls into a peaceful sleep from which it usually awakens with a clear head and no tendency to convulsions. Besides this, Neurosine contains no opium, chloral or morphine, and it is, therefore, admirably suited to these cases.

A PHYSIOLOGICAL STIMULANT AND TONIC—"STEERO" BOUILLON CUBES.

The well-known experiments of Pawlov tend to show that meat extracts have a distinct value in exciting the gastric secretion, so that the custom of beginning the meal with bouillon or soup would appear to be based upon sound physiological principles. A properly prepared and savory bouillon is not only grateful to the palate, but stimulates the appetite and aids the digestive process. It is for this reason, and their great convenience, that physicians will find the "Steero" Bouillon Cubes of material service in all conditions of impaired appetite and faulty digestion. They are prepared with extreme care from meat and vegetable extracts and skillfully blended and flavored to meet the demands of the most capricious palate. A cube dropped into a cupful of hot water makes a delicious bouillon that is stimulating and refreshing.

In acute exhausting diseases, and especially during the period of convalescence as well as in chronic debilitating maladies, "Steero" will prove a valuable addition to the diet as an appetizer and tonic.

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HOPE FOR THE TUBERCULOUS PATIENT.

When demonstrable lesions of tuberculosis show the steady progress being made by the infection, the physician owes it to his patient as well as to himself, to put at the unfortunate one's command whatever advantages may be open to him. Right living, sleeping in the open and the choice of a proper dietary, coupled with such drug therapy as may be indicated, offer the most hope to the tubercular patient who is not in position to seek another climate and lung specialists. The indications for drugs are met by Cord. Ext. Ol. Morrhuæ Comp. (Hagee), for in it are properties well calculated to soothe the

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irritated mucosæ, make the cough more bearable and maintain strength and resistance of the hard-pressed tissues. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) possesses the added advantage of not disturbing nutritional processes, as do so many agents of its class, rendering them a hindrance instead of an aid.

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THE MOTHER.

I am the pillars of the house;
The keystone of the arch am I.
Take me away, and roof and wall
Would fall to ruin utterly.

I am the fire upon the hearth,
I am the light of the good sun,
I am the heat that warms the earth,
Which else were colder than a stone.

At me the children warm their hands;
I am their light of love alive.
Without me cold the hearthstone stands,
Nor could the precious children thrive.

I am the twist that holds together
The children in its sacred ring,
Their knot of love, from whose close tether
No lost child goes a-wandering.

I am the house from floor to roof,
I deck the walls, the board I spread;
I spin the curtains, warp and woof,
And shake the down to be their bed.

I am their wall against all danger,
Their door against the wind and snow,
Thou, whom a woman laid in manger,
Take me not till the children grow!
—From *New Poems*, by KATHARINE TYNAN.

❖ ❖ ❖

A NEGRO was arrested in Atlanta on a charge of vagrancy and brought before Judge Broyles.

"Why, Sam, is this you? What have they arrested you for?"

"Nothin', Jedge, 'ceptin' fragrancy."
—*Life*.

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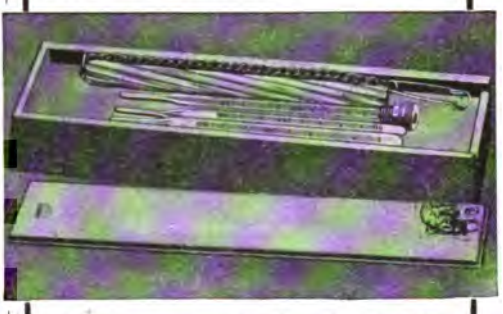

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The Medical Brief

ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG PUBLISHER T. G. ATKINSON, M. D., EDITOR

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The Medical Brief

A Monthly Journal of Practical Medicine.

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EDITORIALS.

AN UNCONSIDERED STUMBLING-BLOCK IN EXPERT TESTIMONY.

AFTER all, the real element of weakness in the expert-witness situation does not, we think, lie in the aspects of the matter which are most frequently discussed—the *ex parte* attitude of the witnesses themselves, as determined by their enormous fees, the spectacular fencing of the opposing attorneys, designed to foil rather than to bring out the truth, and the general effect of confusion in the minds of the jury as to the real issues in the case. These things, in our opinion, are given rather exaggerated exploitation. They pertain only to the occasional case, which, like the rare case in medicine, while it attracts a great deal of attention, is not really representative of any prevailing state of affairs.

In the course of his professional career the writer has had quite frequent occasion to appear in court as an expert medical witness; never, he admits, in anything that could be regarded as a *cause célèbre,* which, as we have said, is representative of nothing, but in several ordinary cases, such as are on the docket every day, and in which the testimony of the medical man is continually being given without any flourish of trumpets or startingly big fees. It has been the writer's uniform experience, contrary to the impression generally to be gained from current discussions of the subject, that the attorneys on both sides were courteous and conscientious men, who were, in the main, interested in getting at the truth, at least so far as the medical testimony was concerned; that every latitude was given the expert witness to enable him to make clear, in his own way, just what he wished to convey; and that the net result of the expert testimony thus elicited and given has usually been to generally illumine the issue.

But in the course of this experience, the writer has encountered, almost universally in his engagements with examining attorneys, and in his contact with the law in general, a stumbling-block which he regards as of far more practical importance than the occasional glaring objections referred to above—a stumbling-block of which, so far as we are aware, no one has ever made mention in discussing the expert witness and his relations. It intrudes itself upon the smallest, no less than upon the biggest, medico-legal questions, and blocks the way to an intelligent understanding between the witness and the court. It consists in this, that lawyer and physician are regarding the subject in hand from entirely different angles, and the great majority of the questions asked by the former in terms of his viewpoint are inherently unanswerable by the latter in terms of *his* viewpoint.

An instance will serve to illustrate the point. The question, let us say, is one of the suspected insanity of one of the parties to the suit. Asked as to the grounds for his opinion upon the individual's mental condition, the physician replies that he made careful inquiries of those who were in daily contact with the party, in

addition to a personal examination, and that they severally made certain statements about the suspected individual which led him to a decision. Attorney promptly moves that all this be stricken from the record, and taken from the jury, because it is mere hearsay—conversation had in the absence of the party at interest. And there you are. As a medical man, one is perfectly justified in taking—nay, one is obliged to take—the statements of other people in making a diagnosis and directing treatment, as, for instance, the statement of the nurse as to whether a patient slept is much more valuable than that of the patient himself; but in law second-hand statements are worthless.

Only recently the writer testified in a divorce suit where he had previously, and without any knowledge at that time of a projected divorce suit, examined the woman and pronounced her a paranoiac and recommended an inquiry into her sanity. The inquiry was never had, but she was placed in the observation ward of the public hospital for a week or so and then discharged. The woman's counsel—a most conscientious and able man—put the question to the writer: "Would you still, in view of the fact that she has been under observation in the hospital and discharged, adjudge this woman insane?" Replying to which, the writer was obliged to remind the attorney that physicians do not "adjudge persons insane;" that that was the business of the probate court; that physicians, sheerly in their capacity as medical advisers, and with no legal relations whatever, make a diagnosis on the symptoms and circumstances; that in so doing they are justified in considering every kind of data, without regard to its legal value; and that in the case in question there had been sufficient data, both physical and circumstantial, to warrant advising an inquiry.

Here, we believe, is a real occasion of stumbling and misunderstanding, as between the expert witness and the court. Perhaps the illustrations we have cited are not as luminous as they might be, but at least they will serve to set forth the fact that the viewpoints of the lawyer and the physician are widely different, and that each is talking in terms of his own viewpoint. Is there any way of translating one into the other, or of reaching a common ground of neutrality, where neither viewpoint intrudes itself?

THE COMMON SENSE OF PSYCHO-THERAPY.

SOME years ago—not so very many, either—in the city of Chicago, a professor of psychiatry, one Parkyn by name, used to conduct a post-graduate school in psycho-therapy. We believe that Dr. Parkyn afterward went into the real estate business, and exercised his suggestive influence upon prospective purchasers of improved property, from which he doubtless realized more material profit than he ever did from the teaching of suggestive therapeutics. Be it understood, however, that this is said in no spirit of satire or cynicism—except in so far as it implies satire or cynicism upon the obtuseness of a profession which was, in the main, utterly unable to appreciate the keenness of Dr. Parkyn's doctrines—for there is not the slightest doubt in our minds that of all the theories and systems of psycho-therapy ever promulgated for the benefit of medical men, his teachings contained the greatest modicum of common sense and practical truth.

To a certain extent, of course, a suggestive therapeutist is born, not made. Hence it is extremely unlikely that any of Dr. Parkyn's pupils in suggestive treatment could ever have achieved his success. He was one of those temperaments which naturally bend and shape others to their own will—not by bluster or mass force,

but as the warmth of the sun, in the old fable, compelled the traveler to remove his cloak. But the power which he wielded and taught was not altogether a natural gift. A great deal of it was nothing but the recognition and utilization of a very commonplace truth concerning sickness and human nature, such as anyone might, by the exercise of a little ordinary sense and tact, equally recognize and utilize.

Those who remember Dr. Parkyn's regnum, and especially those who were fortunate enough to attend his course (among whom, by the way, are included some of our most eminent physicians and surgeons), will recall the enormous range of cases that he treated, not only in matter of numbers, but, what is more to the point, in the matter of variety. From chronic constipation to infantile paralysis; from cold in the head to locomotor ataxia. They will remember that, whatever element of mystery there may have been in his treatment and its effects to the patients who benefited by it, or even to the physicians who witnessed and tried to profit by it in their own practice, he himself made no mystery out of it at all. Indeed, we are inclined to believe that the frankness and simplicity of his theory and practice were more or less of a stumbling block in the way of its more general acceptance. "If the prophet had bid thee do some great thing, would'st thou not have done it?"

He met with criticism and hostility, of course, from the powers that were; and the chief ground of such criticism and hostility consisted in the very aspect of the matter which ought to have demonstrated just where the real crux of his success lay, namely, that he extended his method of treatment (successfully, of course, for nobody bothers to fight unsuccessful practices) to diseases which, by all the canons of medical science, ought to be beyond its reach. We do not mean to say that he cured, or even half cured, but he improved such conditions as locomotor ataxia, hemiplegia, infantile paralysis, and the like. It was quite explicable, of course, and excusable, that he should benefit with his suggestion such neurotic conditions as neurasthenia, hysteria, and even habitual constipation; but that he should benefit organic diseases was both inexplicable and inexcusable.

Yet here, as we have said, lay the whole secret of his suggestive philosophy—and it is an open secret that he who runs may read and profit by. It is simply this, that *in every disease, functional or organic, there is always a certain percentage of the symptomatology, a certain proportion of the disability, which is superadded to the actual physical pathology by the mind of the patient;* and this proportion is always subject to the influence of suggestion. Not only does this hold just as good for hopeless organic troubles such as we have cited above as for less serious disorders, but it applies even more emphatically to them; for the sheer knowledge that a disease is hopeless is sufficient to bring about in the patient a corresponding utterness of surrender which immediately adds its quota of helplessness to the condition. It is this mental complement, so to speak, which in our opinion constitutes the crux of all suggestive therapy. At all events it offers a place for the application of psycho-therapy in practically every diseased condition with which the physician has to do, and one which is easily and readily amenable to every practitioner who is possessed of only the most ordinary sensibility and tact.

In our department of "The Doctor Himself," in this issue, we are abstracting a very excellent article from the *Lancet* upon this very subject—the psychology of the every-day treatment of patients—which we earnestly commend to the thoughtful perusal of our readers, and also to their conscientious adoption. It will be found, we think, that the article in question bears out the principle which we have deduced in this editorial, and which we have ventured to illustrate by a reminiscent review of Dr. Parkyn and his system.

LISTER.

LISTER is dead. We can not bring ourselves to call him Lord Lister, just as we could never accustom ourselves to speak of Lord Tennyson. Lister is dead, at the ripe age of eighty-five. It is comparatively seldom that it is given to one individual in his lifetime to witness such a period of marvelous evolution and revolution as it has been his lot to witness in the science and art of medicine. And still more rarely does it fall to any man to watch such a miracle of progress and development with the consciousness that he himself is the prime influence in the process. Just as biology divides itself into two periods, before and after Darwin; just as morbid anatomy and physiology fall into two distinct eras, demarked by the enunciation of Virchow's *Cellular Pathology;* so the practical art of medicine is separated into two great epochs, whose dividing line is the establishment of Lister's principle of antisepsis. It is not too much to say that the whole fabric of modern medicine and surgery is built around the keystone which Lister shaped—in rude, elementary fashion, it is true, but none the less effectively—five and forty years ago.

The influence of his doctrine is not limited to the operative aspect of surgery; not even to surgery itself. That is a very narrow and inadequate conception of antisepsis. If that were all that Lister's work implied, then he would take a subordinate place with thousands of lesser men who have from time to time devised surgical procedures and techniques of varying degrees of usefulness and permanence. Antisepsis (or Listerism, as we have come to call it) is something infinitely broader and further reaching than that. It is a basic and abiding principle of applied medical science. Whenever and wherever, in the treatment or prevention of disease, we protect the body, by means of germicides, from the invasion of microörganisms, or by the same means inhibit their pernicious activity after they have gained an entrance—there is Listerism.

It is significant of the fundamental nature of Lister's work that we had, long prior to his death, outgrown not only his methods, but in a large measure even his specific doctrine, without getting away from the essential spirit of Listerism. Not only have the modes of antisepsis been elaborated and refined beyond the early dreams of its enunciator, but antisepsis itself has, as we know, been largely supplanted by asepsis. But the informing principle of Listerism is not thereby disturbed, nor its continuity broken. The oak is not the acorn, but both are sequential manifestations of the quercine life-principle. So is asepsis the perfect goal of antisepsis; and both are sequential manifestations of the principle of Listerism.

The actual practical virtues to the credit of Listerism, in the saving of life and the successful performance of otherwise unattemptable surgery, can never, we suppose, be even approximately estimated. We can only assert (and the statement will not be far out of the way) that all of our modern surgical achievements owe their impugnity and efficiency to the principle of asepsis and antisepsis; and that upon this same principle rest all the surgical possibilities which the future may hold in store.

With the death of Lister there passes from the medical horizon one of its great planetary lights; and from the galaxy of science there is taken away one of the last remaining standard-bearers of the old guard of the Victorian era, whose ranks are now rapidly thinning out. It was an age of giants in every field of intellectual endeavor; and, with all our boasted progress, the present age will have difficulty in matching it, either for personnel or for achievements.

Management of Tuberculosis.

By L. Herbert Lanier, M. D., Kansas City, Mo.

Late Clinical Assistant Royal London Ophthalmic Hospital and Central London Throat and Ear Hospital.

IT HAS ALWAYS been the history of medical practice that one extreme of treatment has been followed by a swing of the pendulum to the opposite extreme. This has been well exemplified in the management of tuberculosis. The advent of the fresh air and forced-feeding method as opposed to the old regime has been pushed to such lengths as to become almost a craze; and the situation needs the injection of a little common sense. This is precisely the aim of the author in this paper, which we recommend to our readers to peruse thoughtfully. Especially we commend Dr. Lanier's sensible stand on the subject of "sending the patient away."

Of one thing I am convinced, and that is it will take scientists and medical men a half century yet to overthrow and eliminate from existence the many theories, fallacious ideas and false doctrines that have been adduced by the same class of men for the last nineteen hundred years concerning the cause, management, prevention and cure of nearly all the diseases that human flesh is heir to. I refer more particularly to the difficulty of getting the laity to accept the truth. For the medical profession either know it or can offer no reasonable excuse for not having gained all the information possible on subjects a knowledge of which places them uppermost in the minds of their patients, and elicits praise from all who see them engaged in this noble profession.

There exists many fallacies concerning the management of pulmonary tuberculosis (consumption), and the chief one is that as soon as a diagnosis of consumption is made that the unfortunate victim must have a change of climate; they must be hurried away to the West or Southwest; they must be separated from family and friends and placed among strangers who will exact exhorbitant prices for rooms, board, laundry work, or any of the necessaries of life, and I assure you the best obtainable there, is far from being the equal of your own home, not to mention the pleasure the patient experiences by being the recipient of genuine consolation, and words of encouragement from family and friends.

But as additional proof that the patient should remain in the country and climate to which they have been accustomed, I will mention a series of experiments that have been carried on for a number of years, as follows: Sixteen Esquimos were brought to this country in 1892 from the coldest habitable regions of Alaska, all well and healthy. In less than one year seven had died with consumption, and at the end of three years all had died except one with this disease, and of the one who survived, we understand he is at present suffering with tuberculosis. This attracted the attention of several physicians, and they determined to experiment farther in this direction with the following results:

A number of cases of incipient tuberculosis were taken to the mountains of North Carolina, an unusually healthy place, from the northern boundary of Canada, and immediately upon their arrival there their physical condition grew rapidly worse, and within one year all had succumbed to consumption. The physicians were forced to believe that had all the patients remained in Canada and had been given the modern treat-

ment for this disease that some would have recovered, while all would have lived several years. I dare say this is not very encouraging to those who anticipate changing climate to become cured of tuberculosis.

Though everyone who has traveled to any considerable extent, knows that only those who are gifted with a robust constitution can withstand the profound impressions made upon one by a sudden change of climate, and if this be true, how can the frail frame, and thin blood of one suffering with a constitutional disease, stand as a barrier to the danger incurred by a change of climate? It is a fact well known among physicians that Indians are comparatively free from tuberculosis. There was a time when a case among them was sufficient to attract the attention of all the physicians among them, and the Indian himself regards this as a disease of civilization, as they never knew of a case until the adventurous whites drove them from the country and climate to which they were accustomed, and in fact for nearly a century they have scarcely had an opportunity to stay in one place long enough to become acclimated.

The secret of the Indian's immunity to tuberculosis is that he lives the simple life in the open air, and on simple, but substantial foods free from sweets and condiments, thereby more nearly conforming to laws of health and nature than any other class of people in the world. Indian women who were enjoying perfect health in the forests or on the plains, have been known to be stricken down with tuberculosis in a few months after having matriculated at different schools for the education of women in this country. This was due largely to the unhygienic environments of many of those schools, and to being confined day after day in a building not properly ventilated, and by not getting the exercise to which Indian women are accustomed, and which all women should have. With all due respect for the educators in the various schools of this country, I can not refrain from calling their attention to one thing which, if not properly observed, will change the destinies of thousands of young men and women who have noble aspirations and laudable ambitions to make their mark in the world, and instead of being able to succeed in their chosen avocations we find the word failure echoing from the valley of lost hopes and fallen ideas.

I refer to the necessity of all school buildings being properly ventilated, and to the teaching of calisthenics in all schools, and the importance of having spacious campuses for boarding schools, that the inmates may have an opportunity to take a walk morning and evening, and last but not least, every room should be as plainly furnished as is consistent with comfort and convenience, for where several persons are constantly moving around, the air is heavily laden with dust, and in some of this invisible dust are thousands of tubercle bacilli, the deadly germ of consumption; therefore, the importance of not having curtains, upholstered furniture, bric-a-brac, and a hundred other unnecessary things for this dangerous material to accumulate on, and ultimately find its way into the respiratory organs of all who inhabit a house which has this ornamental paraphernalia.

The members of the medical profession who are optimistic concerning the annihilation of consumption, expect to accomplish this through prevention rather than curing the disease, though I wish to impress every one with the fact that tuberculosis is curable if recognized and properly treated in its incipiency. I would not make this statement had I not seen the marvelous cures that are at the present time being accomplished in several different places in this country and abroad. I have seen cases successfully treated in New York City on Twentieth

Street, which crosses the heart of the business district, though the hospital authorities admitted that they were handicapped in their treatment by noise, dust and smoke.

The secret of their success there was that they made a diagnosis of consumption before the disease had progressed to a serious stage. Frequently discovering the symptoms pathognomonic of tuberculosis when the patient had applied for treatment of another disease and had not suspected that he was the victim of this awful malady. The thought is prevalent among the laity that consumption is incurable, and the depression of spirits, melancholy and unhappiness that this idea causes to those who have it, is often responsible for their death, where the patient would have recovered had he entertained hopes of the recovery, and enthusiastically co-operated with the physician in properly treating it.

I will say to those who are suspicious of being a victim of tuberculosis, go to a reputable physician, have your throat and lungs thoroughly examined; if the physician says no positive signs of tuberculosis exists, then go to him again for an examination each month until you have had six examinations showing negative results. In the meantime sleep with your windows down from the top, practice deep breathing each morning for a few minutes, take moderate exercise (there is danger in violent exercise). If coughing and raising mucus, never expectorate into your handkerchief or on the sidewalk, floor or any public conveyance, or drink out of a public drinking cup. This is the way the disease is spread, and carelessness by someone in this regard may be responsible for your own illness. Never kiss anyone on the lips whether they be sick or well. Wear loose clothing that will allow free expansion of the lungs, and if you are unfortunate enough to have to live in a city where the smoke and dust makes the atmosphere impure and unfit to breathe, then by all means leave for the country at your earliest convenience, and if possible, never live in a crowded city while any symptoms of tuberculosis remain.

In offering this article to the public I have endeavored to invite the attention of all thinking people to a just consideration of the loss of life, poverty, unhappiness, mental derangement and moral degradation that the pathological condition mentioned in this article is causing, and may it stimulate the public, not only to think, but to act in relieving as far as within their power those suffering from or predisposed to the disease of which this article treats, better known as the great "white plague" that beckons us to follow its flag that it may sever the brittle thread of life and launch us into eternity. I am prompted by common interest in humanity to place within reach of the public such knowledge concerning this disease as will materially assist all who care to in safeguarding their own health and assisting others in combating this powerful destroyer and its evil consequences.

If my highest hopes and ambitions are realized it will be when I have touched the philanthropic and sympathetic chord of enough good people to erect sanitariums in the country free from dust, smoke and noise, where every individual regardless of wealth or social position who suffers with pulmonary tuberculosis (consumption), can obtain modern treatment that will arrest the messenger of death and save a useful citizen who can return to family and friends, and all join in singing praises to the scientist and philanthropist alike, both of whom made his cure possible.

Why is Pneumonia So Fatal?

By E. R. Ellis, M. D., Detroit, Mich.

THE AUTHOR of this article is a homeopathic physician, and he treats of his subject from a homeopathic standpoint. Our publication of the paper does not mean that this is a homeopathic journal, or even that we are endorsing that mode of practice any more than we endorse all of the matter which we publish from other sources. But every earnest, thoughtful man, of wide experience, of whatever "school" he may be, has something worth while to tell us. And, indeed, the utterances of another schoolman are often the more valuable just because he has a different angle of view.

This is the season of the year when pneumonia is most prevalent. In fact, during February and March in this latitude, pneumonia and bronchitis are almost epidemic and far exceed in fatality any other disease. Even now, early in January, fifteen deaths are reported from pneumonia in one day and this number is about the daily average, with total deaths forty-three and births thirty-three. Is it not possible, and in fact evident, that there is something wrong with the medical treatment of this disease? What have heart depressants to do with this result? From ancient times blood letting was the universal treatment in all inflammations and was not discarded until the middle of the last century. Many instances of this method are within my recollections, the last in 1845. Now, everybody condemns that method. In its place veratrum, digitalis and the coal tar extracts have had full sway for over fifty years. But all these, like blood letting, are powerful heart depressants, that is, depress the vital force, or life principle, which is the sustaining force in very living organism, whether animal or plant. Many physicians are beginning to doubt the efficiency of these agents and even caution the profession against their use.

Within the last five years a new method has been devised, that of applying ice over internal organs when inflamed, as in typhoid fever and pneumonia, etc. This drives the blood from the surface to internal parts increasing the congestion and inflammation, rendering mortification liable, and is a plain violation of a fundamental principle in all medical teaching which for ages has been "to keep the determination to the surface," thus relieving excessive internal action.

In view of all these conflicting, inefficient and dangerous methods, it ought to be of primary importance to learn if there can be found a better and safer system of medicine.

One hundred and twenty years ago Samuel Hahnemann, a German physician, believed he had discovered a new principle in medicine. After twenty years of thorough study, investigation and experiments he announced the doctrine of "Similous" or that "like cures like." One of his early declarations was that aconite was a sovereign remedy for all acute inflammations. At first he tried it in material doses of one or two drops of the strong tincture. He soon found indifferent, and at times toxic, effects. Those who now use it in such doses have doubts of its value. Later Hahnemann devised the method of diluting or attenuating the remedy whereby curative effects could be had without the least toxic effect or aggravation. It is said that his practice became almost wholly with the thirtieth attenuation. To get an idea of the infinitesimal quantity of such doses any doctor can prove for

himself, by simple means: If one part of the remedy is mixed with nine parts of water the result is the first dilution. If one part of this is reduced with nine parts of water the second dilution contains the one-hundredth part of the drug. If this method is repeated six times the result is the one-millionth part of the drug. If now this is repeated to the twefth degree, and the thirtieth, the reduction is certainly of an infinitesimal nature. In ordinary cases of disease the sixth dilution is very efficient. In acute imflammations the twelfth to thirtieth are far better.

Whatever effects such doses could produce are wholly and purely a matter of experiment, and when repeated as they have been hundreds of times by thousands of physicians of the homeopathic school, it becomes positive knowledge, verified on the sick so fully and thoroughly, as to be entitled to the designation of medical science in its truest and best sense.

"Science" is a much abused term caught up and applied to every conceivable fad and folly. Its only appropriate definition is, "knowledge reduced to order and so classified and arranged as to be easily understood and readily applied to the uses of life." We should accept of nothing less than this.

Many who have had no experience with infinitesimal doses can not easily understand how these can act, and this is true of any doses, small or large, in the cure of disease. It is only by a large experience of our own, verified by our preceptors and medical authors of the past and present generations, that we can be assured of the fact. It is true that the causes of most diseases are imponderable, and if the germ theory is correct, infinitesimal. Then why should not the dose be of similar proportion?

Ninety years ago Hahnemann announced as remedies for pneumonia, aconite, bryonia, ipecac, phosphorus—with a few others as intercurrent remedies—as the most effectual treatment. Many thousands of his followers have endorsed these remedies and found them thoroughly efficient when used intelligently in accordance with their various indications, found in every work, small or large, in the homeopathic materia medica.

'I have been in practice fifty-five years and have never seen a case of pneumonia, pleurisy or bronchitis in acute form which did not yield in a few hours to these remedies.

Often one dose of aconite in a high attenuation, if given at the outset, will prove effectual, inducing free perspiration, with complete amelioration of every abnormal symptom. This is especially true of the 200th attenuation when given to children and women of nervous and sensitive organization.

Last year during February and March, I had five cases of pneumonia and bronchitis in patients ranging in ages from seventy to eighty-seven, all of which made good recoveries with the above remedies in not less than the twelfth dilution. Two of these were twenty miles out of the city and were found to have extensive hepatization when I was called to them, and could only see them every third or fourth day. This last is often an advantage, for when a doctor has made a correct prescription the less he meddles with the patient the better.

It has been said that all "disease is a reaction," that is, nature, the life principle, revolts, or reacts, against the exciting cause whatever that may be, and thence it follows that the remedy should so act as to cause an opposing reaction, one in the line of cure. This is the basis on which the homeopathic system is founded. It is absolutely true and practicable in application.

The primary or direct action of all drugs is toxic in sensible doses. When given in infinitesimal doses no toxic ef-

fect is apparent, but if it be on the principle of "similars" the curative power is often most speedy and wonderful, and this is most true when the remedy is attenuated to the twelfth degree or more. Many of our most noted physicians use mostly the thirtieth and 200th dilutions, and I have thousands of times verified such doses as having great curative power. Disease, in its outset, is a disorder, or disturbance, of the *function* of an organ, and its cure consists in restoring the function or vital force to order or normal action. When this is done nature disposes of germs, or any other morbid material, which may be present in a safe and orderly way.

In treating the most acute inflammations the more attenuated the remedy the more speedy and complete is the cure. Any doctor who will try the remedies above cited in not less than the twelfth dilution (the one-millionth part of a million of the primary drug) and fails, will then have a right to condemn the system.

In using aconite in pneumonia and all *acute* inflammations it should be very highly attenuated, and will thus frequently abort the disease, if given in the early stages. After the aconite has shown its curative power the other remedies mentioned above may be indicated also highly attenuated or diluted.

Allow me to recite a typical case for the use of aconite: A clergyman friend in a distant town telephoned me that his son, about twenty years of age, was ill with pneumonia, and being a graduate and having some experience in medicine himself, had been giving aconite, strong tincture, three drops in one-third glass of water, and of this teaspoonful doses. On the fourth day there was no decided benefit. I advised that he give the remedy in the thirtieth solution. Later he reported that in a few hours the boy was in a profuse perspiration with complete relief from every abnormal symptom. In a few hours the perspiration closed, but being somewhat skeptical, he repeated the dose, with the result that he was soon "sweating like a race horse." He had graduated and practiced medicine some years before, and prepared the remedy by putting a few drops of it in a vial of water, shaking it well and then turning out nine-tenths, refilled with water as before, for fifteen times (instead of thirty as I had advised) when, as he expressed it, he "thought the vial was very clean," and gave a teaspoonful every hour or two with above result and a speedy cure.

Any physician can prepare many homeopathic remedies as above, but the last attenuation should be with absolutely pure alcohol. Then if he will renew or continue the dilution he may in time reach the thirtieth, which in prescribing can be used in water, five or ten drops in one-third glass, and of this teaspoonful doses. Thus he will greatly benefit his patients, save himself much worry from fear of toxic doses of drugs, and become largely independent of the drug stores.

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THE "POOR MAN'S DOCTOR."

A. D. HARD, M. D.

The midnight call, without complaint,
Nor asking for the visit's worth,
He promptly answers Pity's plea;
And soothes with skill the woes of birth—
The "*Poor* Man's Doctor."

* * * * * * * * *

The quiet city on the hill;
The grassy mound; the modest stone
Supplied by pennies of the poor,
And on its face these words alone—
The "*Poor* Man's Doctor."

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SHOPMAN—"The fresh herrings are very nice this morning, m'm."

Lady—"Er—have they roes?"

Shopman—"Well, m'm, all fish is dearer at this season!"

Three Cases of Ectopic Gestation.

By Edgar P. Ward, M. D., Ph. D.
Professor of Obstetrics and Embryology, American Medical College, St. Louis, Mo.

Report of Three Cases of Ectopic Gestation in One Family; Operation; Recovery.

ECTOPIC PREGNANCY is always of peculiar interest to the general practitioner because, while it must be reckoned a rare condition, it is one of those rare accidents which, like the lightning, one never knows where it will strike. Any physician is liable, at any moment, to be confronted with it, and every contribution to its recognition and management is welcome. Dr. Ward's third case has a special interest in being an exceptionally rare one. Purely ovarian pregnancies are few and far between; there are, we believe, less than twenty reported in all literature.

It is not my intention to discuss extra-uterine gestation in general, but to report three out of ten cases, selecting these three on account of their relationship; all young and all primipara; two sisters and a cousin.

I will report the cases in the order of their occurrence. In the third case, on account of rarity, being strictly ovarian, I will go into detail, and on account of the many peculiar circumstances connected therewith.

Case I—Mrs. M——, age twenty-two, married four years. Menstruation established at age of twelve years, married at seventeen; history of abortion four years previous for which she was curretted by a very competent gynecologist.

In May, 1902, I was called to see the patient on account of a severe uterine hemorrhage. Menstruation had been regular up to this time, when she had passed her regular period for five or six days.

Patient had been seized with a severe cutting pain in the left iliac region, which was followed by a gush of blood from the uterus; so severe was this hemorrhage that she, and her mother, became very much alarmed. Patient strenuously denied having taken or done anything to start her menstruation.

Upon my arrival all pain had ceased, and the hemorrhage had subsided to what would be a severe menstrual flow.

I placed the patient in bed, prescribing a sedative. Patient had, for four days, a hemorrhagic discharge, and gave all indications of a perfect recovery. Was discharged. One week later I was called with a similar history, pain severe and cutting in character, and a severe hemorrhage; hemorrhage at this time was much more severe than the week previous. A careful bimanual examination revealed upon the left side a mass the size of a goose egg, and close to the uterine wall. I diagnosed a tubal pregnancy and advised immediate operation. Patient and family consenting, abdomen was opened and an unruptured tubal pregnancy of the left fallopian tube was removed; patient made a good recovery.

Case II—Mrs. L——, age twenty-six, married one year, consulted me relative to attending her in confinement. Pregnant three months; no history.

February 28, 1907, was called to see her owing to a severe hemorrhage from uterus, gave sedative and packed vagina lightly with iodoform gauze. Upon my return the next morning, ten hours after first visit, found gauze thoroughly saturated with blood. Upon removal of the same, there came from the os several large clots of blood. I repacked and

gave sol. adrenalin chl. 1-4000, twenty drops every hour. I returned in five hours, and found the second tampon thoroughly saturated with blood. I removed the same and found more clots of blood coming through the os. I concluded I had a case of inevitable abortion to deal with, and sent for assistance, anesthetized the patient, and proceeded to empty the uterus. To my intense surprise there was nothing in the uterine cavity but parts of the placenta which my curette brought away. I could now feel a bulging mass upon the right side, and at right angle to the uterus. I decided upon an immediate abdominal section. The patient was hastily prepared and abdominal section made. I found a bicorvated uterus with bulk of the fetus in the right tube. I removed the tube and fetus and let the placenta remain in uterine cavity, from whence it was removed.

Patient made a good recovery.

Case III—Mrs. E——, age twenty-five, menstruated at fourteen; married at eighteen. History of abortion three years previous. Severe cystitis six years ago, confined to bed for six weeks. Patient was a very bright and intelligent woman, very ambitious and of a nervous temperament. Her married life had been very unfortunate, as subsequent events proved that her husband was a moral degenerate in so far as the rights of property of others was concerned. Seven years previous he occupied a responsible position, fell to the temptation before him. Sacrifices made by her enabled him to escape the consequences of his shortcomings (and I might add right here that since this time he has developed into a paranoiac.)

During these seven years this woman had lived under an intense nervous strain, always with a fear of a repetition of what had occurred. This repetition did occur in the early part of March, 1905, and the financial part of the matter had to be settled by his relatives, she knowing nothing whatever of this occurrence, but his relatives insisting that he must inform his wife of the conditions and that they would be there upon the following Sunday to visit them. He put off telling her till the last moment. Of course, this was a profound shock to her, and immediately after relatives arriving, the woman was thrown into a highly nervous state. For two days they harped upon her feelings, appealing to her not to allow what he had done to break up their home—they were more interested in that than in her physical condition. As stated, this continued for two days, when she suffered a complete collapse, and I was called. Patient's history at this time: menstruated three weeks previous, bowels had not moved for forty-eight hours, temperature 97, pulse 86. Some pain in right iliac region. Sedative given with no relief. The next day, March 14th, I gave her a high colonic enema of three quarts of water, of which there was no return. Upon returning to the patient about five hours later, I found she was still retaining this enema, and pain in right iliac region increased.

I now watched the patient with increased interest, and when the enema had ben retained for twelve hours, I frankly told the patient there was something about her case that I could not understand, and that if there was anything I should know it—as it would be for her benefit. It was at this time I learned the history relating to her husband as related above. Realizing the profound nervous shock she had passed through, and with the continued presence of his relatives in her home, it was impossible to get such rest as she required, I ordered her to a hospital. Shortly after arrival at hospital she was seized with a severe pain in right iliac region. After careful examination, with a consultant, we eliminated the possibility of appendicitis, and as there were no signs of pregnancy, patient having

menstruated only three weeks previous, ectopic gestation was not given a thought.

Twelve hours after patient was received at the hospital and twenty-four hours after the enema, patient had a copious movement of the bowels, all pain subsided and with nerve sedatives and rest patient gradually improved in strength and left the hospital in two weeks.

Patient went South in early part of April. During April and May she gradually improved, but did not menstruate in either month. On May 30th, while waiting for a train to return some eighty miles to where she was stopping, patient was seized with a severe pain in the right iliac region, at the same time quite a severe hemorrhage from the uterus. The pain was so severe that it was necessary to call a physician, who gave her a hypodermic of morphia. Upon arriving at her stopping place, a resident physician was called, who diagnosed the case as appendicitis, and administered two injections of anti-streptococci serum. The next morning she had broken out in great blotches all over her body, which itched intensely, and soon turned very dark; in fact, almost black. Temperature was normal, hemorrhage from uterus continued very profuse all through the month of June. The attending physician adivsed against an operation in that climate at that time of the year, and made heroic efforts to "stop the flow" and "allay the appendicitis."

On July 3d I was informed that the patient was starting for home (which was a thousand-mile trip). Early in the morning of July 4th I received a telegram requesting me to meet them upon the road, which I did. I found the patient with a normal temperature, pulse 86, severe uterine hemorrhage. I packed the cavity of the uterus with iodoform gauze as best I could upon a Pullman. We arrived in St. Louis on the morning of July 5th, and the patient was removed immediately to the hospital. I operated upon her the same day, and found a ruptured ovarian pregnancy upon the right side with pelvic hematoma the size of a child's head. The patient made a slow but uneventful recovery.

This case is particularly interesting because of the extreme rarity of the ovarian form of ectopic gestation. There are no statistics as to the frequency of this form.

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TREATMENT OF FALLING HAIR.

Walter Lefevre, in the *Medical Era,* classes falling hair into two varieties: Those in which there is no apparent cause for the disorder, and those in which some disease, local or systemic, can be found. In the first class of cases we usually find the condition hereditary, and the scalp is beginning to be bound down tight, so that the pressure on the bone is commencing to cause atrophy of the hair bulb and to diminish the supply of blood. Here mechanical means offer the only hope, and then ofttimes nothing can be done. Hair tonics are of no avail, as hundreds of patients can testify.

It is in the second class of cases that good results can be obtained, and the cases are quite numerous, too. We should first always consider the general systemic condition of the patient. To maintain a normal growth of hair requires a large amount of nervous energy. If the wear and tear on the nervous system, from the habits of the patient, exceeds the normal energy supplied by nature, some part of the body will suffer, and ofttimes first the hair. In cases of fever, we frequently have a complete loss of hair, until nature recuperates and brings it in again. So we must treat the mind and body, advise the proper exercise, look after the habits and health, and that is where a good doctor excels a good barber in the treating of falling hair. In a certain number of cases we find the patient in good health and the falling hair due to a simple lack of ac-

tivity of the scalp. In these cases frequent brushing, massage, vibration, vacuum cap treatment, electricity, will produce a cure. Perhaps any one of the above, but all would be better.

Of the diseases of the scalp affecting the hair, only one will receive our attention. That is dandruff. To the medical fraternity its names are legion. Pityriasis, alopecia furfuracea, seborrhea sicca, erythema squamosum, eczema seborrhoicum, are some names that have been applied. It is usually divided into two classes—the oily and the dry. In the dry variety we find numerous dry, bran-like scales in the hair, on the scalp, and usually on the clothing. The scalp is dry and the hair dry and harsh. In the oily variety the scales are frequently caked upon the scalp and the hair quite greasy. The disease is generally thought to be microbic, and a germ that has been isolated is thought to be the cause. Resorcin, salicylic acid and sulphur are the remedies of most value in these cases. In the dry form an excellent ungt. is the following:

White wax	3½	drachms.
Ol. pet	2½	ounces.
Aqua rosa	1	ounce.
Soda biborate	15	grains.
Sulphur ppt	3½	drachms.

M. Sig.: Apply to the scalp at night.

A lotion of twenty to thirty grains each resorcin and salicylic acid to the ounce, equal parts alcohol and bay rum, is also excellent. In the oily form it is best to use a salicylic acid lotion thirty grains to the ounce in alcohol until the scales are removed. Then a milder lotion can be used occasionally, for unless proper care of the scalp is taken the condition will recur.

Office Treatment—In treating these cases in the office a fixed routine is followed.

Vacuum Cap—The patient is first placed under the vacuum cap for ten to fifteen minutes. This vacuum is exhausted with a compressed air pump that maintains an even, steady pull. In those cases where the scalp is not bound down too tightly a distinct redness is produced. Before using the cap the author thought probably the pressure of the rubber diaphragm would tend to occlude the blood vessels. But if there is any occlusion, the dilatation of the capillaries more than compensates. The author has been using the vacuum cap for some time and has had some very nice results with it in conjunction with the rest of the treatment.

Electricity—All cases receive an electric shower to the scalp from the high-frequency coil. This, besides its stimulating effect, produces a pleasant sensation that lasts some time.

The galvanic current is used in small, bald spots, either pole being applied, a current of eight to twelve milliamperes being used.

Vibration—A compressed air vibrator with a stiff rubber applicator is used. This gives a pleasant, stimulating massage in a few minutes.

Lotions—All cases receive an application of a good antiseptic lotion. The ingredients and strength depending upon the condition of the scalp. A nice lotion for constant use after the scalp is in a healthy condition is equal parts of alcohol and bay rum.

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DESTRUCTIVE ACTION OF ULTRA-VIOLET RAYS ON PLANTS.

That electric light exerts a harmful influence upon vegetation is shown by the blackening of leaves that have been exposed to this light for some time. Maguenne and Demoussy have shown that this deterioration is caused by the ultra-violet rays present in the radiation given out from the lamps. For their experiments they used a Heraeus mercury lamp, which is very rich in these rays, the exposed plants being killed in a comparatively short time in consequence of the rapid destruction of the protoplasm.

Vaginal Douche Therapy.

By Dr. Henry J. Berger, 608 East New York Street, Indianapolis, Ind.

NOT infrequently the stone which the builders rejected becomes the headstone of the corner. Not infrequently the procedures and methods which we had abandoned in favor of others which we deemed more efficient and scientific are found after all to be superior, and are reinstated in general favor and usage. For several years we have been taught that the fountain syringe is the only scientific method of vaginal irrigation, and the old bulb syringe has been relegated to disuse. The author of this article thinks that in making our comparison we have paid too much attention to the mechanics of the syringe and too little to the anatomy of the genital canal, and on this latter basis he argues the superiority of the bulb syringe. This is a practical question, with a working interest for the practitioner, and we feel that a frank discussion of the subject is therefore of value to our readers.

The "how, why and wherefore" of the vaginal douche is best explained by the combined discussion of the female genitalia and the instrument to be used as the douche. It is apparent that a consideration of the anatomy of the female genital organs is indispensable, and hence my reason for selecting such a manner of presentation of so important a subject.

We all know that the anterior and posterior vaginal walls are normally in close contact. From this fact we deduct that (a) an infection of any part of the mucous membrane of the vagina (especially the specific and infectious varieties) must soon become universal, it being only a question of time and the virulence of the infectious germs before the entire mucous membrane is involved in the inflammatory process; (b) that a certain amount of pressure is necessary in forcing entrance into the vagina or to separate the vaginal walls. The advantage of the bulb syringe over the fountain syringe in keeping a safe degree of pressure sufficient to accomplish the distension without forcing liquids into the womb will be subsequently explained.

The cavity of the vagina (from within outward) is downward and forward. The cervical os projects into this cavity to a variable degree, depending upon the ligamentous support of the womb and the position of the uterus. In complete prolapsus the cervix emerges between the labial folds. The mucous membrane of the vagina is continuous with the mucous membrane of the external os.

From the foregoing facts we conclude that: (a) Attempts to insert mechanical devices into the vagina (especially pointed instruments) in any other direction than the normal direction may cause injury to the cervix or to the vaginal walls.

(b) That a low position of the cervix is an obstacle to the ingress of instruments, and that the frequent use of a douche nozzle which must be continuously moved all around the vagina in order to reach all parts may cause repeated traumatisms to the cervix, and in this manner predispose to the development of malignant disease. A bulb spray syringe is far superior to the fountain syringe, as its nozzle remains stationary, while the fluid is emitted in all directions.

(c) That in cases where the os is partially dilated, persons unfamiliar with the anatomy of the genitals and where the fountain syringe is forcibly employed, may force an entrance into the womb, hence predisposing to an abortion, miscarriage or premature labor.

(d) That inflammations of the vagina may extend by contiguity to the cervi:

and that in septic forms of endocervicitis the fountain-syringe nozzle may force some of the infectious material into the womb.

(e) That owing to the downward slope of the vagina drainage is very easy. If a fountain syringe is used, all the liquid will emerge as rapidly as it enters. For this reason, whenever hot vaginal douches are indicated, a fountain syringe will fail to bring about the desired results. On the other hand, the bulb syringe, which is equipped with a vaginal shield, plugs the vagina and thereby prevents the rapid escape of the hot water. The repeated compressions of the bulb causes repeated tonic excitation of the pelvic blood vessels, resulting in vascular contraction and relieves circulatory stasis and pain.

The vaginal sulci or fornices serve as excellent haven or harboring places for all kinds of germs and infectious secretions. These deep recesses can be effectively reached by a centrifugal spray only. The vaginal walls should be kept separated, the vaginal orifice plugged, and the circular spray then bathes and washes the entire lining of the vagina.

With this brief anatomical consideration we will now proceed with the enumeration of all conditions in which vaginal douches are advantageously employed.

In all Varieties of Inflammation of the Vagina, Especially the Septic and Specific Varieties—Douches accomplish the mechanical removal of the discharge, and, inasmuch as astringent antiseptics are employed in such cases (bichloride of mercury or zinc sulphate), the douche will also prevent the rapid progress of the infection. A good bulb spray syringe is the best mechanical device for removing discharges from the vagina. The danger of transmitting infections to another person precludes the use of the same syringe by any other person. From a hygienic standpoint, each woman should have her own syringe, just as she has her own toothbrush or comb.

In Leucorrhea—A leucorrheal discharge may occur in single as well as in married women. It is first necessary to determine the cause and treat the same. The second essential factor is to instruct the patient in the proper technique of douching. Astringent, hot-water douches give the best results. By the plugging of the vaginal opening with the shield, which should be attached to the syringe, the astringent solution is able to exert its maximum effect upon the vaginal mucosa.

In Subinvolution of the Uterus—The beneficent action of repeated copious hot vaginal douches in reducing the size of a large subinvoluted uterus is familiar to every physician. It must, however, be remembered that the water must be as hot as can comfortably be borne by the patient (100°-110° F.) in order to secure a contraction of the pelvic blood vessels and subsequent depletion. If a fountain syringe is used, the water drains out rapidly and nothing is accomplished. With a bulb syringe, on the contrary, each compression is a mechanical stimulus inciting vascular contraction. Antiseptics are not necessary in these cases unless there is a concomitant cervical or vaginal discharge. The douches must be repeated about three or four times daily in order to accomplish the involution of the uterus.

In Dysmenorrhea—In the so-called ovarian dysmenorrhea, where pain precedes the flow for several days, hot-water douches as described will relieve the pain if commenced four to five days before the expected menstrual flow. The hot water acts in such a manner as to relieve pelvic congestion, thereby controlling pain. Congestive dysmenorrhea due to exposure to cold, endometritis, or to displacements, can also be controlled by hot vaginal douching. Always ascertain the cause of painful menstruation. Obstructive and membranous dysmenorrhea may require operative interference.

In Lacerations of the Cervix, Vagina and Perineum—Hot vaginal douches (antiseptic) will prevent infection of the denuded tissues and small tears may heal by primary union. Large tears require plastic operations.

In Displacements of the Womb—Uterine displacements ultimately interfere with the circulation of the uterus, resulting, therefore, in enlarged and congested uteri. The use of the douche in displacements is similar to that in subinvolution. Should repeated hot douches fail to relieve the distressing symptoms, and after a course of treatments by tampons have failed, we must then resort to an appropriate operation.

In Puerperal Sepsis—In all cases of puerperal infection, with or without the presence of visible signs of infection on the genitals, antiseptic vaginal douches should always be employed. All lochial discharges in these cases are infectious, and the womb is as a rule enlarged and tender. Not only are vaginal douches employed, but also uterine douches in cases where the infection is limited to the body of the uterus. In such cases a special catheter having a return flow is used.

The majority of accoucheurs are in favor of giving a post-partum douche, but, on the other hand, the administration of an ante-partum douche is absolutely contraindicated, unless there are positive signs of sepsis or gonorrhea. In tardy labors, copious hot vaginal douches have sometimes caused the cervix to soften and dilate.

It is needless to state that in all major operations on the female pelvic organs the genitalia should be surgically cleaned, and the vagina should be thoroughly douched by antiseptic solutions. Physicians know the value of antiseptic precautions, and therefore, in ordering douches for their patients, should not neglect to instruct them in keeping their douches clean, and that no woman should allow anybody else to use her syringe.

In conclusion, I would state that douching is a necessary hygienic and prophylactic measure, that it will limit the spread of infections, controls pain, inflammation and congestion, and that in order to get the full benefit of douches one must know the "how, why and wherefore" of the douche. The bulb syringe is far superior to the fountain syringe, as conclusively shown under the anatomical discussion. In and by using the syringe we must remember the proverbial expression, "Cleanliness is next to godliness." And lastly, the fountain syringe is best adapted for rectal conditions (such as enemata, both cleansing and nutrient, enteroclysis, etc.), while the bulb syringe claims first place in the treatment of all vaginal and uterine conditions.

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AN AGREEABLE DISINFECTANT.

The following mixture forms a thick cream, a small quantity of which, poured on a plate, soon diffuses an agreeable odor throughout the apartment, acting at the same time as an effective disinfectant:

Camphor	20 parts.
Chloride of lime	50 parts.
Alcohol	50 parts.
Water	58 parts.
Oil of eucalyptus	1 part.
Oil of cloves	1 part.

The ingredients are to be mixed *secundum artem.*

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SCARLET RED DUSTING POWDER.

Pavia, in *Therapie der Gegenwart,* recommends the use of the following powder in cases where the ointment is unsuitable:

Scarlet red medicinal	1.0 gram.
Boric acid, in fine powder	9.0 grams.

The wound is first carefully dried with cotton, then a thin layer of the powder is applied, finally the cavity is loosely packed with gauze. The powder is applied by means of an insufflator, first every day, then every second, third or fourth day until the wound is closed. The results have been better than with the ointment.

CURRENT MEDICAL LITERATURE.

SCROFULOSIS.

HERMAN B. SHEFFIELD, in *American Medicine,* treats of this subject. Scrofulosis of the mucous membranes, he says, is manifested chiefly by chronic nasopharyngitis. The nasal mucous membrane is red and swollen, and discharges a seropurulent secretion which produces yellowish green crusts within and around the nares and excoriation of the upper lip. A similar acrid discharge is usually observed also from the ears. Both the nasal as well as the aural discharge may become purulent and fetid, by implication of the periosteum, cartilage and bony structures of the nose and ears, and lead to permanent deformities and functional defects, *e. g.,* ozena, deafness, etc.

Scrofulosis of the eyes, the so-called *strumous ophthalmia,* usually begins with redness and swelling of the palpebral mucous membrane, and in a great number of cases is soon followed by involvement of the cornea in the form of *phlyctenular keratitis* with strong lacrimation, pain and photophobia, with a great tendency to corneal ulceration and opacities.

The lymphatic glands are affected either early in the course of disease or late—secondarily to the inflammation of the skin or mucous membranes. They often undergo caseation and suppuration, and unless completely extirpated, open spontaneously and continue as pus-discharging fistulæ or indolent ulcers. The course of the disease depends greatly upon the vitality of the patient and the mode of treatment. It is always chronic. Children removed from the obnoxious surroundings and placed under suitable constitutional as well as local treatment frequently recover completely. Otherwise the tuberculous process is prone to spread to the osseous system and the internal organs. Spina ventosa, osteomyelitis and spondylitis form frequent sequelæ, and transition into general tuberculosis is not uncommon.

Characteristic as the symptom-complex of scrofula seems to be, errors in the diagnosis are nevertheless very apt to be made. The perplexity is often great in differentiating it from inherited syphilis with which affection scrofula has many symptoms in common. In all such doubtful cases we must, on the one hand, employ the tuberculin reaction and examine the discharges for tubercle bacilli, and on the other hand, resort to Wassermann's reaction or administer mercury and the iodides. One should not be too hasty in pronouncing a case as "scrofulosis" because of the so-called "torpid habitus" of the child (*i. e.,* pale, flabby, puffed face, thick nose, swollen and excoriated lips, etc.), as this appearance may be met also with hypertrophied tonsils and adenoids and local infections by other micro-organisms, especially the streptococcus and staphylococcus. In fact, it is this group of cases which most frequently leads to diagnostic errors and tends to abnegate the existence of true scrofulosis, *i. e.,* local tuberculosis.

PARESIS.

C. C. Kirk, in the *American Medical Compend,* states that one of the first symptoms seen in the paretic is clouding of consciousness. Patients are unable to clearly understand their environments, do not recognize their friends, can not listen attentively to an ordinary conversation, their duties are performed incorrectly and with difficulty, they fail to recognize the day of the month or season of the year. Defective memory is very characteristic; they are unable to talk of recent events with any degree of accuracy, and their memory for past events

may be good for a while, but is usually bad after the disease has progressed to any considerable degree. Their ideas deteriorate until there is a complete disturbance of all mental processes. The rapidity of this process depends upon the progress of the disease as well as upon the intelligence of the patient, the place of real reminiscences are taken by imaginary ones, any story that enters the mind is told as genuine. Kraeplin says that these fabrications are most pronounced in cases of optic atrophy. There is a change in the conduct of the patient; they disregard custom and law. In advanced cases there may be transitory stereotyped movements, vebigeration, negativism or catalepsy. There is usually a change of disposition. Patients who were formerly stable will become unstable; there is a change in the emotional life, they become sullen and peevish on the slightest provocation, show no regard for the claims of others, become elated when their delusions are expansive, and dejected when their delusions are depressing, crying and laughter follow in quick succession without apparent reason; there is impaired judgment, business and social standards are disregarded, silly, senseless schemes are produced with serenity. At first they may have some insight into their condition, but this is usually lost after the disease has progressed.

There are four types, according to Kraeplin. The demented form, which is characterized by gradual progressive mental deterioration without prominence of either hallucinations, delusions or great psycho-motor disturbances. The expansive form is characterized by great prominence of expansive delusions and prolonged course and greater prevalence of hallucinations. The agitated form is characterized by a relatively sudden onset with a condition of great psychomotor excitement and delirium, and the presence of the most extremely expansive delusions, great clouding of consciousness and a short course. The usual prodromal symptoms are lacking and there rapidly develops extreme meglomania. The depressed form is characterized by despondency and depressive delusions, which prevail throughout the course of the disease. The onset is insidious.

Physical Symptoms—In the beginning the tendon reflexes may be normal, diminished or exaggerated, lost on one or both sides. Exaggerated is the most common, but is not of as much diagnostic value as the absence of K. jerk. Oculo-motor disturbances are frequently present. Pupillary changes, such as loss of light reflex, sluggish reaction to light, Argyl-Robertson pupil, loss of the consensual light reflex, which is a dilatation and contraction of the pupil of one eye when the other is exposed to direct light. The sympathetic reflex may be present, which is dilatation of the pupil on stimulating the skin of the neck. There may be slight speech defect or slight tremor about the muscles of the mouth. In the second stage all these symptoms are more marked. Muscular weakness is noticeable, although the patient may be very well nourished. The Rhomberg symptom is usually present and is much more marked.

CHOLECYSTITIS.

H. M. Richter, in the *Lancet-Clinic*, points out that the terms cholecystitis and gall-stones are not to be used interchangeably; stone formation follows infection and is an end-result. When found in what is supposed to be a first attack of gall-bladder disease, they mean an overlooked earlier infection.

Mechanism—Either an ascending infection from the intestine by way of the common and cystic duct, or a descending infection from the blood and vascular system by way of the liver. Infection reaching the bile is enabled to exert its pathogenic action on the gall-bladder wall by being kept in contact with it for a prolonged period of time. The normal reservoir-like action of the bladder is a sufficient factor. It is not necessary to

presuppose a pathological degree of stasis. Constant flow of bile in ducts accounts for marked infrequency of early infection of latter.

Types of Inflammation of Gall-Bladder -Acute and chronic. Acute may be mild, with but slight involvement of bladder wall, mainly the mucosa, causing the pouring out of an excess of mucus and an excessive desquamation of its epithelium. These are the important factors in cholesterin formation and deposit, hence the primary factors in gall-stone formation. More severe grades of inflammation analogous to these are found elsewhere, but suppurative type is most common. Gangrene may result from severe infection or over-distension from blocking of cystic duct. Repeated attacks are precipitated by stones formed in earlier attacks or remaining unhealed lesions. Ultimately there is extensive fibrosis of gall-bladder wall, with great thickening and retraction, a type commonly associated with stones both in bladder and ducts.

Secondary Changes in Gall-Bladder—Local traumatism of stone with infection, cause of ulcer formation; extrusion of stone and false diverticulum rare. Papillary epithelial overgrowths and malignant epithelial changes occur with sufficient frequency to be properly regarded as cancer by the precedent pathological condition.

Extensive infection from gall-bladder to ducts, with or without the passage of stones into the common duct, results in cholangitis of acute type, with possible suppuration, or chronic cholangitis, with extension to biliary capillaries and development of a biliary cirrhosis.

Gall-tract infection, especially with stones, bears a direct causal relation to pancreatitis. Local peritonitis is the cause of adhesions involving neighboring structures—stomach, duodenum, colon. A reciprocal relation exists between gall-bladder and appendix infections, both by way of the intestinal canal and the portal vascular system. Stone large enough to cause intestinal obstruction may pass through the gall-bladder and intestinal walls by a process of ulceration and extrusion; enormous stones can, however, pass by way of the greatly dilated cystic and common ducts. This true mechanical obstruction must not be confounded with the ileus of acute cholecystitis.

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FRACTURES OF THE FEMUR.

John A. Lee, in the *International Journal of Surgery,* asks the question, How shall we treat these fractures in the very aged? And answers it, Let them alone.

You all know, he continues, the dangers to life in such injuries. Pneumonia following a fracture of the neck of the femur is one of the commonest causes of death in the aged. We have several every year at the hospital.

Set them up in a hard bed with a sand bag to prevent eversion. If they have an impacted intra-capsular structure they may get well with a useful limb. The unimpacted fracture should be treated with the simple Buck's splint when possible. Do not break up the impaction in any case of fracture of the femoral neck. An absolutely helpless limb results when portions of the ligament are interposed between fragments of bone, just as we see in fractures of the patella. The only treatment for this is open operation.

The treatment of fractures of the neck of the fumur in the more robust consists in well-made Buck's extension with or without suitable side splints. The success of such treatment with Buck's extension depends on attention to details, and it is the neglect of this that makes failures. The patient should be placed flat on a fracture bed, or any hard single high bed, with several boards or a small door between the single hard mattress and springs.

Do not attempt to treat a fracture of the neck or of any other part of the femur on a soft low double bed.

The foot of the bed should be elevated from six to ten inches for counter-extension—a detail often neglected. The plaster, preferably rubber plaster on heavy moleskin, should be fitted with buckles to be joined to the straps on the spreader, which should be two inches wider than the foot to free the ankles from pressure. A rope passing from the middle of the spreader should pass through a pulley, to which should be attached a weight sufficient to correct the shortening. This may be from fifteen to twenty-five pounds. One or more sand bags may be employed to prevent eversion of the foot.

This complete apparatus must not only be used according to directions, but every detail must be scrupulously examined daily for the first two weeks. The patient is constantly slipping down in the bed, the weights become displaced, the pull becomes uneven, or the bandage or plaster slips. Any or all of these will tend to influence unhappily the result.

After three weeks, and if the shortening is less than one-half inch, a cast embracing leg, hip and pelvis may be employed, or the extension may be continued for several weeks. The extension apparatus or cast may then be removed, and the patient allowed to move his leg around the bed for a week or two, when he may be allowed to move about on crutches, gradually putting more and more of his weight on the injured limb.

This routine treatment of fracture of the neck of the femur should be also employed in fractures of the shaft, with some variations. In some transverse fractures, under anesthesia and prolonged and powerful traction, the broken ends of the bone can be coapted, and anterior and posterior splints with extension immediately applied. Lateral splints sometimes aid in holding the broken ends of the bone together.

In the case of fractures above the condyles, extension may be used, or the double inclined plane. In case we decide to employ extension, a sand bag or pad must be placed beneath the lower fragment to prevent it dropping behind the upper.

As regards prognosis, in 1891, Stephen Smith, as Chairman of the Committee on Fractures of the American Surgical Association, defined a satisfactory result to be present when the shortening did not exceed one-half to one inch, and I do not think we can expect to hope for a better outcome today.

The treatment outlined will, if carefully followed, approximate to the above results in the large majority of cases that present themselves in hospitals and private practice. In a certain number of these the results will be bad, and in others we shall have absolute failure due to the character of the fracture, or to the inefficiency of the treatment.

The subject of this paper is the treatment of fractures of the femur by the general practitioner, and this is the only method that can be hopefully employed by him.

If the fracture is of the unusual type, difficult to diagnose, reduce, or keep in position, if you are not getting union in two weeks, the case belongs to the surgeon. He may employ many other more modern and radical measures, which in the hands of any but the experienced and skillful will result in failure and perhaps disaster.

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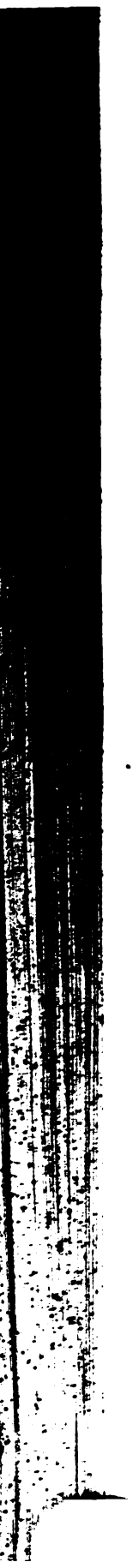
DIFFERENCES IN SURGERY OF ADULTS AND CHILDREN.

Chas. N. Dowd, in a paper before the Philadelphia Pediatric Society, cited three conditions in which the surgery of children differed from that of adults, one in the neck, "inflammation of tuberculous lymph nodes;" one in the chest, "suppurative pleurisy or empyema," and one in the abdomen, "tuberculous peritonitis." He spoke of 465 operated neck cases. Fifteen were in young children who showed more tuberculosis in other parts of the body than the older children; eradication of the disease was more diffi-

cult. None died after operation, but two died later, one of general tuberculosis, the other of tubercular meningitis. Twelve have been traced and are still in good condition. Between the ages of two and seventeen years the clinical picture is fairly definite. Lymph nodes in the upper part of the neck break down before the lower ones are involved. In this group were 374 patients. The nodes were thoroughly removed, with an operative mortality of ¼%. Patients are usually out of bed in three days and out of the hospital within ten days. About 75% are free from recurrences and about 90% ultimately cured. The scar resulting is insignificant. In adults the inflammation is apt to extend to the lower lymph nodes of the neck before a cold abscess is formed above. The tuberculous inflammation is more extensive and the operation more difficult, but still gives excellent results.

Dr. Dowd observed 204 cases of empyema in children to 40 cases in adults. In children the empyema is usually but a part of a general pneumococcic infection; 51% healed promptly after opening the chest and resecting a small piece of rib; 19% healed more slowly; while 30% died with evidences of pneumonia, peritonitis, pericarditis or other general infection; 79% of the bacteriological examinations indicated pneumococci as the infecting agent. The patients in whom lung contraction persisted usually did well with thoracoplasty and decortication. In adults only 32% showed pneumococcic infection. Here the results of thoracoplasty and decortication were less favorable.

Dr. Dowd observed 46 children and 30 adults with tuberculous peritonitis. Fluid was present in the children in marked degree only seven times, and in only four instances could the appendix be removed. Several of these patients showed marked improvement after the operation. Of the adults 40% had excessive amounts of fluid; 50% had the lesion so localized that either a portion of the intestine or the uterine appendages were removed.



ether. With chloroform (and even ether) it is possible to anesthetize a sleeping child, sometimes a great advantage.

Nitrous oxid has for older children a great field, producing very quickly, safely and comfortably a deep anesthesia and may alone carry the patient through the operation, air being admitted through the inlet valve. But any minute ether may be switched in (not changing the inhaler) and smoothly substituted. Nitrous oxid and oxygen (excluding the air) affords a method which approaches the ideal anesthesia. The technic involves a steady supply of gas with control of oxygen introduced in amount needed.

The proper position of the patient under any anesthetic is with the head on the side and low, mucus gravitating away from the larynx into the buccal cavity, whence it is easily removed by pressing the cheek without entering the mouth. The conjunctiva should never be touched, to test reflex.

Contraindications—These in each individual case should be carefully considered. Heart diseases—congenital or acquired—if fully compensated, are not absolute contraindications, but if with any lack of compensation avoid chloroform. Obstruction to air passages by lymphatic hypertrophies is a very great embarrassment and "status lymphaticus" a serious condition to meet. Kidney lesions may be met without increasing the damage by giving but little ether and not prolonging the operation, hence nitrous oxid alone or in sequence with ether is to be chosen. Bronchitis and other respiratory inflammations contraindicate ether, but, without resorting to chloroform, nitrous oxid then ether, preferably by the "etherized air" method, furnishes so dry and unirritating a vapor that, with care in the amount given, most of the objection is obviated.

Atropin hypodermically, well tolerated by children, finds a place here. Morphine, so useful in adults, especially for operations requiring more analgesia than anesthesia, has almost no place in children and increasingly less as the age is younger. It abrogates by its very physiologic action some essentials for perfection cited above, safety and delicacy of control of the depth of anesthesia, it increases nausea and prolongs recovery; and a quick recovery is in children even more important than in adults.

STENOSIS OF THROAT FOLLOWING "606."

W. G. Spencer, in *The Lancet,* reports a case of congenital specific stenosis of the fauces and pharynx in a young woman who showed persistent nodes and a gummatous scar on the scalp. In June she was admitted under Mr. Arthur Evans for severe ulceration of the fauces and pharynx. Tracheotomy was done and "606" administered, after which the ulceration rapidly healed, resulting in stenosis. Mr. Evans then performed a plastic operation upon the soft palate and fauces; the tracheotomy tube was then left out, and the patient was discharged on August 19th, breathing and swallowing well. On October 15th she was readmitted under Mr. Spencer with dyspnea, hardly able to swallow fluids. After reintroducing the tracheotomy tube it was found that the naso-pharynx would allow of the passage of only a very small catheter, whilst a No. 10 passed with difficulty through the fauces and pharynx. On gently dilating to admit a finger the fauces and pharynx, down to the larynx, were found to be changed into a very dense ring in which the vessels of the neck had become involved. Therefore, a No. 10 œsophageal tube was passed through the left nostril down the pharynx, through which the patient was at first fed, but soon she swallowed beside it. Later, a full-sized œsophageal cannula was passed, beside which the patient could now swallow ordinary hospital diet, and had rapidly put on flesh. She could herself take out the tube when she went out of doors, and put it back

before a meal. For the present, therefore, the necessity for gastrostomy had been avoided. The tracheotomy tube would be required permanently. The very dense and extensive fibrosis which had followed the rapid healing of the ulceration after "606" was a disappointment.

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ADVANTAGES OF HYPODERMIC ANESTHESIA.

Lanphear, in the *International Journal of Surgery,* enumerates these as follows:

Absence of Nausea—After operation there is absence of nausea and vomiting—a most important thing, especially in abdominal surgery.

Abolition of Pain—Post-operative pain is conspicuous by its absence. Patients often pass a most comfortable night instead of suffering intensely, and sometimes sleep much of the first twenty-four hours succeeding operation, awakening next morning with a demand for food.

Early Feeding—The desire for food may usually be gratified (except, of course, in operation on the stomach and other special work where peristalsis is objectionable), as the secretions are not checked enough to interfere with digestion. This is of great import, particularly when the patient has become weakened before operation and when there has been unusual loss of blood.

Prevention of Shock—When this form of anesthesia is used, shock is absent unless there is excessive hemorrhage or unless too much ether or chloroform is used. Much of what has been called "shock" in the past was the result of an extensive amount of chloroform and, in less degree, ether.

Freedom from Fear—A most prominent advantage of this form of anesthesia is the absence of fear or dread of the operation room.

No Anesthetist Essential—A most decided advantage of this form of anesthesia, and especially of true hyoscine-morphine-cactin (H-M-C, Abbott), supplemented by a local anesthetic (Abbott's Anesthaine preferred) when needed, is that a surgeon may perform many operations without the assistance of another doctor. The importance of this in country practice can hardly be over-estimated. Curettage of the uterus, repair of cervix, repair of perineum, forceps delivery, operation for strangulated hernia, for appendicitis, reduction of fractures, etc., may be done with this agent, plus a local anesthetic.

Economy—To hospitals, and to many doctors, the cost of ether or even of chloroform in something of more than passing interest. In hospitals, where many operations are performed, the use of even one tablet an hour or so before the patient is taken to the operation room will reduce the anesthetic bill of the institution one-half or more.

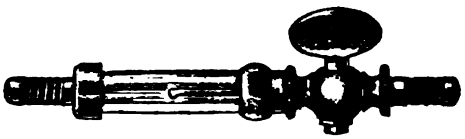
Lessening Labor—To the nurse this form of anesthesia is a godsend. The relief is not only physical, but mental; no anxiety about post-operative pain, vomiting, restlessness, fear and thirst of the patient—all this means much to the conscientious hospital nurse; and the patient who has had both forms of anesthesia can never again be induced to submit to chloroform or ether.

No Interference with Peristalsis—There is but little, if any, interference with bowel movement. An enema in twenty-four hours usually suffices, and even that may not be necessary, for not infrequently there is natural evacuation within the first day, unaided.

Long Anesthesia—The analgesia continues for many hours. This is of distinct advantage in prolonged, tedious operations. To know that the patient is not being carried to the brink of the grave by too much chloroform or ether is an immeasurable comfort to the operator who has to use a long time in his work.

SALINE DROP REGULATOR.

E. Canny Ryall, in the *Lancet*, describes a simple affair he has devised to overcome the difficulty attending all the existing forms of continuous infusion and proctoclysis apparatus in regulating the flow of the saline fluid. The barrel is made from toughened annealed glass, and the nickel-plated metal mounts at either end for attaching the india-rubber tubing are securely cemented on with metallic solder, thus allowing the regulator to be efficiently sterilized either by boiling or steam. The stopcock of the regulator can be adjusted by



the surgeon before leaving the patient, so that any required number of drops may be administered during a given period. The glass barrel then readily allows the dropping rate of the solution to be kept under observation, and the nurse in charge of the case can easily check the rate of flow by counting the number of drops passing through the extremity of the inner indicating tube, altering the rate of flow, if necessary, by the use of the stopcock. This simple device obviates the need for spring clips, and in practice will be found extremely efficient for proctoclysis when used in conjunction with a simple apparatus consisting of a Thermos flask, fitted with a length of rubber tubing and a rectal pipe or catheter. It will be noticed from the illustration that the inner metal indicating tube is fitted with a bulbous extremity, thus enabling the drop regulator to be employed in an emergency as an intravenous cannula.

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DIAGNOSIS OF SCARLET FEVER.

P. C. Cruikshank, in the *Practitioner* (London), states that too little attention is given to the condition of the mouth, nose and throat in respect to diagnosis. Most text-books say there are three varieties: simple, toxic and septic throats.

The characteristic appearance of the throat, whether mild or toxic, is red, shiny, glazed and angry looking, with minute points of injection on the tonsils, uvula and palate.

There may be swollen tonsils, general edema and no exudation. With such a throat and the so-called pulse temperature ratio, we may expect a rash.

In the septic forms and exudation is present and the diagnosis lies between diphtheria and scarlet fever, and the nonscarlatinal tonsillitis.

In the severe septic forms, tonsilar swelling is great, with ulceration, discharge and perhaps otitis media.

In the mild forms of mixed infection we may have simple scarlet fever plus follicular tonsillitis.

With a definite false membrane, an appeal to the bacteriologist is imperative.

The association of diphtheria and scarlet fever causes much trouble. The author regards post-scarlatinal diphtheria and diphtherial scarlet fever as preventable while coincident infection may be common.

Apart from membranous and ulcerative throats, other exudative conditions are to be seen, and sometimes the ordinary appearance of follicular tonsillitis.

The transient nature of the rash in scarlet fever should lead to the ability to diagnose a case without seeing the eruption. Bacteriologists may later give us a simple test, but at present we must rely on clinical observation: (*a*) before the appearance of the rash is likely, (*b*) while present, (*c*) and when absent and no longer expected.

The first period is brief, yet the sudden onset should put one on the alert, and the acceleration of the pulse and temperature greatly aids. The strawberry tongue is regarded as a sign of recession, if not convalescence.

The absence of sweating and high temperature may lead us to expect pneumonia, but the pulse-respiration ratio of the latter as compared with the pulse-temperature ratio of scarlet fever, enable us to differentiate.

With a child ill less than twenty-four hours and definite red papules on the face, behind the ears, and appearing on the body, it is probably "German measles."

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THE NAUSEA OF ASTIGMATISM.

A. S. Core, in the *Medical Review*, admonishes that in order to prescribe glasses intelligently and correctly, it is necessary to make a correct diagnosis of the underlying cause of the trouble, and if it is necessary to improve the vision, correct a reflex, or both, by the use of glasses, or through some systemic treatment. In these requirements, most optometrists, opticians, department stores and mail order houses are not qualified. They frequently prescribe glasses that do not relieve the symptoms and often when a glass is not required, and they fail to make the proper diagnosis of general disease when it is the cause of diminishing vision. In these conditions they injure the eye, or permit the patient to go without the proper treatment for a systemic disease that may prove fatal by neglected treatment, and collect more money for this imperfect service than the capable physician would for good service.

The spectacle peddler and mail order houses make little or no effort to correct astigmatism by prescribing cylindrical lenses. They do all they can to sell only spherical lenses, because they cost less. The majority of eyes that need a spherical lens for the correction of vision in the distance also may need a cylindrical lens to correct an astigmatic error in one or both eyes more than it needs the spherical, and it is seldom that spherical lenses will give perfect vision and relieve the eye-strain without combining them with a cylindrical lens.

The cheap spectacles sold in the mail order houses by a "professor" (?) with a test-card of different sized type, to be read by a customer with such lenses as fancy decides as the necessary glass, is certainly amusing, as one eye may require a lens quite different from its mate. Eyes are so often mismated, as well as these cheap lenses, which are so badly ground that they may represent one thing in one spot and something quite different in another part of the same lens. They are imperfect; that is why they are cheap and injurious. All of these cheap lenses are spheres and for hyperopic eyes. For myopic and astigmatic conditions of the eye, nothing is attempted in the way of a correction, but it is left to the customer to make the selection of such lenses as fancy dictates. A large number of people fit themselves with these glasses and when headaches continue and vision grows more dim, they naturally conclude there is no benefit to be gained by the use of glasses. As a rule this service causes more eye-strain, headache and irritation than the lack of lenses, and they aggravate a simple error in a very important organ into a positive injury that may be very grave and serious.

In car nausea associated with headache, blurring of the vision, dizziness and vomiting, the mail order house "professors" (?) do not take this into consideration, as most patients give the prominence to the stomach trouble as the principal disease. For the person who experiences nausea on the cars will usually experience dizziness and nausea when looking at checked or plaid goods and also when reading music, or when looking at choppy waves or the trembling motion of water. In these conditions the stomach is usually blamed as the cause, and this gentry advise treatment by some patent dope sold by a friend for gastritis, gastralgia, dyspepsia, etc., for the relief and correction of the trouble.

In investigating these conditions it has been found that a majority of people who suffer from car nausea, dizziness, vomiting, etc., had astigmatism in one or both eyes, and the correct adjustment of proper glasses cured the nausea when constantly worn. With the use of proper glasses all symptoms will disappear without subjecting that poor, abused stomach to dyspepsia tablets, pepsin wafers and other disagreeable drugs. Glasses cost less than medicines, and the pleasure and comfort from their use when properly fitted is better for the health, and physicians who do not refract eyes should not send patients to traveling spectacle peddlers, but some reliable oculist.

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CHRONIC APPENDICITIS.

E. M. Stanton, in *Annals of Surgery*, after a critical study of the post-operative end results in 100 cases, and a review of the literature the writer arrives at the following conclusions:

(1) The majority of patients suffering from chronic appendicitis give a history of having had one or more attacks of abdominal illness, with a sequence of symptoms recognizable as those of an acute appendix attack, viz., sudden severe abdominal pain, usually beginning in the epigastrium or mid-abdomen, accompanied by nausea and vomiting and followed by a period of pain and tenderness in the right lower quadrant.

(2) "Appendiceal dyspepsia" has been characterized by symptoms strikingly analogous to the earliest symptoms of acute appendicitis, viz., attacks of epigastric or mid-abdominal pain, or distress, only rarely accompanied by subjective symptoms referable to the region of the appendix. During these attacks the pain or distress is nearly always increased by food intake.

(3) Pain confined chiefly to the right lower quadrant and not associated with attacks of epigastric pain and nausea is seldom due to the appendix, and before making a diagnosis of chronic appendicitis in these cases every other possible condition should be excluded.

(4) The majority of failures have been in patients complaining of right inguinal pain associated with chronic constipation. At operation these patients have presented an unusually long or dilated cecum, usually accompanied by other evidences of enteroptosis. In the future a certain proportion of these patients may be cured by some such operation as that advocated by Wilms, but appendicectomy alone does not cure.

(5) Unless the diagnosis is absolutely certain, the gall-bladder, stomach, and right kidney should be explored, and the possibility of a Lane's kink should be excluded in all cases operated upon for chronic appendicitis.

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A HOME-MADE COOLERY.

It is surprising, says *Good Health*, how many housewives are coming to recognize the importance of the home-made coolery or winter refrigerator. It is easily constructed, and once used is considered indispensable. From a sanitary viewpoint it is to be recommended and, too, it saves the busy housewife many steps.

A dry goods box may be made to answer the purpose most satisfactorily, the preferable size being from three to four feet high and two feet deep. It is a wise plan to paper the box, into which the shelves have been fitted neatly, that the wood odors may not penetrate the cream and butter. Some use white oilcloth for the lining. After the inside of the box has been lined and the outside painted a color to correspond with the exterior of the house, the improvised coolery is fitted to the outer frame of the pantry or kitchen window. The lifting of the lower sash opens the coolery and a muslin curtain tacked to the sash keeps the device hidden from sight.

CLINICAL SOCIETY OF NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

Meeting of January 8, 1912.

Strangulated Hernia Operated Upon Under Cocaine.

Case Presented by Dr. Robert Brennan.—Patient was a man of forty-one years of age and is single. His hernia was noticed at birth, and for sixteen years he wore a truss. At sixteen he discontinued its use, but after four years became engaged in laborious work and had to put it on again. One week ago the hernia came down, and in spite of his efforts, he could not replace it. Three days after it came down, he began to vomit, and this continued for two days, until he entered the hospital. He had a marked mitral lesion, which suggested the desirability of cocaine anesthesia. On cutting down, the sac enclosing the hernia was liberated, letting out bloody fluid, and a knuckle of black gut. Under hot applications to the gut the color became restored in about an hour, and the wound was sewed up. His pulse promptly dropped from 140 to 100 after the operation, and has remained normal since.

Dr. Morrow said he had been interested in cases of strangulated hernia, from the fact that discoloration of the gut is often due to traction upon the vessels, and that time might be saved by promptly replacing the gut in the abdominal cavity. He had demonstrated that normal gut, when constricted at the femoral ring for a short period of time, would promptly lose its color and become black, and would regain it when shoved back into the abdomen.

Thyro-Glossal Cyst.

Case presented by Dr. J. A. Bodine—Dr. Bodine showed a specimen of thyro-glossal cyst, which he had removed from a case in its entirety. The case was somewhat uncommon. He had noticed from former careful observations with Dr. Myles that these cysts had a way of returning after operation, or at least leaving a suppurating condition in the neck. To obtain success the cyst must be dissected from the base of the tongue to the thyroid gland, including the ducts. The cyst wall was thin, and nothing should be left if success was to be obtained and a cure promised.

Dr. Morrow said that he had never operated upon a thyro-glossal cyst, but had a case of branchial cyst, which came under the class of congenital malformations. This case wes very difficult because the wall of the fistula, which opened into the pharynx, was adherent to the deep vessels and it was very hard to separate them, but this was finally accomplished.

Amputation of Finger Tip with Replacement and Recovery of Finger.

Case presented by Dr. J. A. Bodine—Dr. Bodine showed a case of a little fellow who, while working at a cloth-cutting device in a clothing shop, caught his finger tip in the machinery, cutting off the finger about half an inch from the tip. The boy was badly frightened and had run to the hospital, leaving the finger tip on the floor in the shop. A friend was sent after it, and returned two hours later, bringing the tip, which was rather dried up, but softened after soaking in normal salt solution. The tip was put in place and bound up. The finger showed complete healing and a round line of scar tissue where the junction had taken place.

Resection of the Posterior Root of the Tri-Facial Nerve.

Case presented by Dr. J. A. Bodine—Dr. Bodine showed a case of tri-facial neuralgia of long standing in a woman sixty years of age. She had tried injections of alcohol from time to time, but these finally failed to relieve her, and she was willing to have anything done. With the patient in a sitting position, Dr. Bodine had opened the skull in front of the ear, just in front of the zygoma,

the opening being 5 c.m. in diameter, the bone removed and the brain lifted up. The tri-facial ganglion was not removed, but he went in behind it and put a hook around the root and resected it. Twenty-four hours after the operation she was entirely free from pain, and is cured for the balance of her life. There was no particular difficulty about the operation, although it was the first he had done of the kind, and so far as he knew was the first time it had been performed in this city. It was not removing the ganglion, but the pulling out of the sensory root from the pons varolii which rendered the area very dangerous. It is not difficult, however, for anyone trained in surgery. He believed that he had separated the sensory from the motor roots, as mastication had not been interfered with. Such cases as had been treated by this method had been successful. At the beginning of the operation he had torn the middle meningeal artery, but there was no trouble checking the hemorrhage. Dr. Bodine thought that the fear of hemorrhage makes cowards of many surgeons. The patient did not suffer from shock, and the pulse did not go above 90. The operation requires skill and judgment, as it is distinctly a one-man operation from start to finish.

Dr. Keller had given this case of Dr. Bodine's four alcohol injections with slight benefit. Alcohol injections usually give relief in these cases, and in his experience of fifty cases he had had excellent results. Where relief was not obtained he thought that the lesion was further back than the injection reached. Even when a resection was contemplated Dr. Keller thought it benefited the patient to precede the resection by alcohol injection.

Dr. Connor welcomed any method of resection which spared the motor roots, as a ganglion resection usually resulted in a loss of the eye.

Case of Salpingitis Infection Following Conception.

Case presented by Dr. Morgan—Dr. Morgan showed a case of a woman thirty-one years of age, married, with one child eleven years of age, and a history of several miscarriages. Her husband stated that she was exposed to gonorrhea, but she gave no history of inconvenience. Four weeks before admission to hospital she called her family physician, who found her in pain and bleeding. She said she had missed one period and was afraid she was going to miscarry. Bi-manual examination showed a mass posterior to the uterus, and a diagnosis was made of a probable ruptured ectopic pregnancy. When seen a little later there was a tremendous mass. On consultation she had been removed to the hospital and a laparotomy performed, and a pregnant uterus found. There was nothing to indicate a submucous or an intramural fibroid. Further examination brought to light a tubo-ovarian cyst on the right side and a chronic pyosalpingitis of the left tube with the fimbriated extremity closed. The tube and ovary on the right side were removed and the left tube also. Dr. Morgan was amazed that the woman was pregnant. She began to menstruate after a rest of two weeks in bed. The interesting feature was that the woman became pregnant after an infection which apparently closed both tubes. "W."

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ELECTRICITY FOR PLANTS.

At the Royal Botanic Gardens, England, on December 9, Mr. Emil Lowitz described an invention of Dr. Franz Muller, of Frankfort, for promoting the electro-chemical culture of plants. By means of the electrical apparatus in question it is possible to invigorate trees or plants and to pump food into them to promote their growth, also to induct insecticide for the purpose of exterminating all parasites. The invention is specially applicable to (1)

the acceleration of the germination of seeds; (2) the regeneration and revitalization of plant life; (3) the extermination of parasites; and (4) the treatment of soil. Mr. Lowitz said that one test was made in the last few weeks with old wheat from which, in the ordinary way, 30% at most could have been expected to germinate. But after treatment the astonishing result of 76% was obtained, and these seeds produced within two days very robust and sturdy seedlings. The very fact of using electricity and charging a tree with it brought new vitality to the tree, and enabled it by itself to assimilate more food, and, consequently, grow better and stronger; and if an insecticide were pumped into any tree it would not only destroy parasites from the root, but right through the tree.

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DEFECTIVE RAILROAD MEN.

Wm. Weston, in the *International Journal of Surgery,* thinks it no more absurd for a master mechanic to accept a locomotive whose valves are out of adjustment, or one of one hundred horsepower when one of five hundred horsepower is specified, than to select an engineer with defective vision or hearing, or one who is a neurasthenic, which denies him quick and ready perception and steady nerves. If the former would be unlikely, is it not true that the selection of a defective engineer would be ridiculous? In the former case there would merely be loss of power to acquire speed or draft, while in the latter case life and property are endangered with consequent results. We can anticipate the usual answer to this situation, namely, that such a condition does not exist. However, we must differ, and I merely recite one case from several in substantiation of this position.

Three years ago there occurred a wreck about sixty miles south of Columbia on a prominent railroad, in which the entire train—a fast New York and Florida passenger train, running between sixty and seventy miles an hour on a straight road—ran into a long open switch upon which was a number of loaded coal cars. The train was derailed and several passengers injured. The engineer, apparently in a desperate condition, was taken to a hospital in Columbia. Upon thorough examination, conducted by several surgeons, no injury could be found, and it later developed that this engineer had been in several previous wrecks and had been a profound neurasthenic for years. Comment is unnecessary. Such cases are not infrequent. The writer knows of another engineer now on duty, who is a pronounced neurasthenic, and nothing but the best of good fortune can prevent a catastrophe, similar to the one mentioned, befalling him also. Unfortunately, if his were the only life endangered, the matter would not assume so serious an aspect.

From neglect to take advantage of the knowledge physical examination of employes would reveal, the author believes that many times railroads have to pay damages for injuries for which they are not responsible. It is true that a thorough examination at the time of the alleged injury may often put a check upon this variety of graft.

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IRISH INSURGENCY.

Lord Londonderry tells a tale, which conveys its own moral, about an Irishman in his employ. 'Twas on the everlasting subject of Ireland's wrongs. "We'll not get home rule for ould Oireland," said this son of Erin, "till Germany, France, Russia and America give them blayguards of Englishmen a good bating." After a pause he added proudly: "And begor, t' whole lot of 'em shoved together couldn't do it! Oh, it's the grand navy we've got!"

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MISTRESS—"Have you a reference?"

Bridget—"Foine; oi held the poker over her till I got it."

THE DOCTOR HIMSELF.

A WORD TO THE KNOCKER.

By Dr. Axel Emil Gibson,
Beaumont, Cal.

A "KNOCKER," in its broader sense, is an individual whose natural tendency is to find fault with his surroundings, whether elemental, animal or human, and whose life is mainly spent in efforts to detect and make known the shortcomings of his fellow-creatures.

The difference between a knocker and an ordinary citizen lies in the perspective by which they severally measure the moving panorama of life. The knocker looks at life and existence from a personal viewpoint, with his sympathies more or less locked up in his own interests. He looks upon the world and its teeming activities only as so many opportunities for his own personal advantage and comfort.

This gives a clew to the moral make-up of the knocker. The keynote to his individuality is *self*, with egotism as theme, and personal interest as leading motive. With the constitutional persistency of a Kansas sunflower, he turns his face every hour of the day toward the object of his desire, which, in place of being the source and center of light and glory, is the illusive reflection of his own aggrandizement, personal ambition and self-love. In his varied dealings with the world his position is always to be found within the personal equation: Myself versus the other fellow.

He joins a church or society not because that he may be able to add to the range and power of its usefulness, but rather that he may derive some sort of personal benefit from the membership. The question with him is not how much he can do for the good of the order, but rather of how much good the order can be to him. He is ensouled by one single motive, one single love, one single interest—the success, protection and interest of his own personal self.

Governed by self-love the knocker finds no room in his heart for the cultivation of sympathy and compassion for his fellow-man. The world becomes a football for his ceaseless kickings. If he happens to be a farmer he finds fault with the sun and moon, rain and shine, heat and cold, etc., if in any way the orderly operations of nature should happen to interfere with his plans or advantages. As a member of a municipality, he will oppose with all bitterness that is in him any fiscal measure that perchance may cause a slight rise in the taxation of his property—even should the success and growth of the entire commonwealth swing in the balance. That personal interests often have to be sacrificed if the greatest good is to be insured to the greatest number is a lesson in social altruism which the knocker has yet to learn.

In his egotism to keep all the good things of a community for himself the knocker puts a damper on the general spirit of enterprise. Like the eunuch in Mohammed's seventh heaven, whose nightmare attitudes and unsleeping vigilance kept believers of other faiths from entering the sanctuary, the knocker holds every stranger and prospective settler at arms' length by referring to the resources and general conditions of the place in a slighting and criticizing manner. Instinctively conscious of his own worthlessness he judges others by the same standard, and surmises every new settler in the commonwealth as a professional or business failure, nondescript and unsafe to patronize.

Back of the general mistrust and uncharitableness of the knocker lies his entirely false notion that a breakdown of the career of others—morally and finan-

cially—adds luster and prosperity to his own. In the subtle, trackless method of scandal-hungering gossip and swinish muck-racking, he finds an ambush where he can safely attack and demolish the character and reputation of his unsuspecting victims. A moral assassin, the knocker, under cover of subtle and half-veiled insinuations, drops his sugar-coated, character-corrosive poison in the stream of social gossip and slinks away, quietly to watch the workings of his infamy, while the victim remains in pitiless ignorance of the process of moral anihilation closing in on him. The highwayman who takes chances with his victim is a man of honor compared with the individual who strikes down his man from behind, while concealed and protected by the surface decency of social position.

In the profound symbolism of Dante's weird allegory, the lowest sphere of his *Inferno* is reserved for traitors, slanderers, falsifiers, and hypocrites. With their heads twisted backwards, this scum of humanity are plunged into caverns of reeking filth while pursued and stung by venemous serpents. The fantastic conception of the great Italian poet in construing a habitation for "the least erected imps of hell" could find no more fitting retribution for the slanderer and social blackmailer, known as knocker, than this ghostly sphere at the very bottom of the infernal pit.

The knocker belongs to that sorry tribe of social degenerates and political "undesirables" that disturb the peace of the commonwealth by perpetually emptying their muddy currents of selfishness into the waters of communal life. His egotism keeps him away from giving his support to any enterprise not directly promoting his own personal interest; while he lifts his hand, and especially his tongue, against any innovation or method of improvement which in the slightest degree involves a personal expense or sacrifice to himself. His heart is in his pocketbook, and his sympathy is absorbed in his personal advantage. In place of giving individual support to the commerce and industry of his home community, he gives the latter his patronage only to the extent the profit of the deal exceeds the possibility of any other market. Back of his actions, in some way or other, is always to be found the motive of personal advantage. He loves what is in the world only for what he can get out of it.

But the knocker forgets that action and reaction are equal and inseparable, and that as we sow so we shall also reap. If we sow selfishness we shall reap selfishness; and directly or indirectly be compelled to grapple with the deceit and cunning employed in his own game. The knocker forgets that what we are is made up of what we do, and that the only safe and sure way to make us loved, trusted and honored is to promote those very feelings and experiences in the lives of our fellow men.

The world is a ship, humanity its passengers—and no matter as to anxiety of individual passengers to reach the port—the only movement which insures the progress of the single individual is that which insures the progress of all. Happiness and progress to be permanent and enduring means one for all and all for one.

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PSYCHOTHERAPY IN PRACTICE.

By Dr. W. P. S. Branson, in *The Lancet.*

There is only one measure of the suitability of an illness for treatment with the aid of psychotherapy, and that is the measure of its emotional and ideogenic ingredients, provided always that rational faculty is not seriously in abeyance. There is practically no place for it in urgent and acute physical illnesses, nor in the graver developments of chronic ones; for in proportion as physical disturbances are profound, emotional ones tend to sink into insignificance. Nor can it be employed, I imagine, for developed psychoses, since an appeal to reason is the

essence of the practice. But of such psychoses I have no experience. On the other hand, it is applicable, in a greater or less degree, to a large assortment of chronic maladies of little urgency, however recalcitrant they be to treatment; to neurasthenic states, especially chronic ones; to the milder types of hysteria, and to a great variety of physical symptoms masquerading as physical diseases in the fashion I have described. These masking symptoms may be situated anywhere, and their position gives no guide to their character, but on the whole they appear most often in the guise of stomach symptoms.

The field of operations being so wide as it is, the practitioner must be armed with some means of knowing when he is face to face with a case suitable for psychotherapy. Often enough the emotional element can be detected at once, while at times it is rigorously concealed. There are, however, certain indications which are of assistance in determining it. Those which I have found most useful are the following:

(*a*) *The character of the symptoms*—As is well known, the most constant characteristics of neurotic symptoms are vagueness and multiplicity, alone or together. An account of such symptoms, even when given the most matter-of-fact air possible, should raise the suspicion that they are in part at least neurotic.

(*b*) *The patient's manner of recounting his symptoms*—A self-contained neurotic patient will often succeed in veiling his character so long as he is on formal terms with his doctor. But with growing intimacy self-control tends to suffer occasional lapses which permit a peep at the real individual. Thus, a man may carry off his first interview with an absolutely impenetrable air of unconcern, yet at a later one may show by some trifling manifestation that he is laboring under an emotion not justified to all appearance by the state of his physical health. For example, his eyes may become momentarily suffused with tears, or he may be betrayed into an occasional superlative foreign to his previously indifferent utterances. Such things throw the strongest doubts upon the genuineness of the careless air, and suggests that whatever else the patient may need, he needs consolation and reassurance.

(*c*) *The state of the knee jerk*—Whenever it is difficult on other grounds to form a judgment of the emotional state of a patient, the knee-jerk is a valuable aid, for this investigation takes him off his guard. Any considerable exaggeration of the knee-jerk, in the absence of other evidence of organic nervous disease, betokens a patient whose nervous irritability is exalted.

It follows, then, that the first step in practice is to attain a sufficient degrec of intimacy with the patient to allow of a fairly accurate estimate of his temperamental condition at the time, and the view he takes of himself. It appears quite certain at the first interview that the emotional component of the illness is negligible, physical treatment will do all that can be done. If there is a doubt it is best to temporize and wait for further evidence. If, on the other hand, there is good evidence of a large emotional element in the case, the next step is to identify and appraise the physical basis, if it can be found. For just as it is futile to treat with aperients alone a man whose illness really depends upon an undetected fear of cancer in the rectum, though his complaint is of constipation, so it is futile to treat by reassurances alone a man whose multitudinous symptoms are founded upon, and continually reinforced by, an undetected nasal polypus or stone in the kidney. Confident though I am that emotional components bulk very large in the sum total of many diseases which present themselves to view as mainly physical, I am equally confident that in a large proportion of such cases there is an organic basis not to be neglected with impunity. Un-

doubtedly some functional derangements are purely ideogenic—*e. g.*, hysterical paralyses of the mimetic order; but by comparison with the vast total of symptoms of whose physical cause we are ignorant, these instances are relatively rare. It is true that if there be physical sources for this great collection of symptoms they must be essentially unimportant, since commonly the symptoms are transient and do not develop a physical lesion which can be identified. Still this does not prove that a lesion has not existed; and experience of such diseases as disseminated sclerosis warns us that symptoms regarded at their inception as physically baseless (or "functional" in the loose but special meaning of the word) may be shown by subsequent events to have had a sufficiently material foundation. I do not wish to suggest by this example that an ominous significance should be attached to these unassorted symptoms, but merely to urge that the physical aspects of a disease should not be neglected though its emotional component be never so greatly over-developed. To disregard this caution and rely upon psychotherapy alone, unless in most exceptional instances, is to court disappointment and to throw undeserved discredit upon a useful ally. Consider neurasthenia, for example. No one, I take it, would deny that there is a pronounced ideogenic factor in most cases within this category; yet it is waste of time to treat neurasthenia by psychotherapy alone. especially when the fatigue-element is prominent. For it is pretty certain, though unproven, that a metabolic fault is at the bottom of neurasthenia, and it stands to reason that this fault can not be met by arguments. This warning is of particular moment, for there is the same tendency for one interested in the psychical side of physical diseases to overlook organic faults as there is for the pure materialist to overlook emotional ones. Therefore it is an urgent matter that physical examination should be thorough.

Yet even here there is room for the play of judgment, for whereas there are some of these patients who will not be persuaded of their freedom from organic lesions unless after the most protracted and impressive investigations, there are others in whom the intricate procedures required for accurate diagnosis may themselves do harm by adding fuel to self-suggestions. In dealing with patients of the latter stamp it may be better practice to hazard an optimistic view somewhat insecurely based (unless it involves the risk of overlooking some grave but remediable lesion like early carcinoma), rather than to admit, even temporarily, the possibility of serious mischief. There can be no formal rule in such matters, and the physician must be guided by common sense and intuition in selecting the course most likely to be beneficial to the patient in hand.

Let us suppose, then, that doctor and patient are by now on secure and fairly intimate terms, such terms I mean as have made the patient appreciate that the doctor understands him and is genuinely interested to help him. A frank relation of this sort is quite indispensable, for the sensitive type of patient most likely to be benefited by psychotherapy is precisely the type of patient most ready to take umbrage at any seeming suggestion that his sufferings are not real; and it is not an easy matter to persuade a man that one accepts the reality of a symptom, while at the same time one is proclaiming it in part at least ideogenic. Let us suppose, further, that the physician has satisfied himself of the existence of a large emotional element in the illness, and has set about trying to remedy the physical fault by the ordinary means. The next step is to select the moment suitable for embarking on rational explanations by which it is hoped to point out to the patient the path along which he has devveloped the mind-made factor of his malady, in order that he may be permanently protected, to some extent at all events, from similar tricks of fancy.

Much depends upon a wise choice in this respect. For to ask attention for rather complex arguments from neurotic patients reduced by long ill-health to the last pitch of physical and emotional frailty is palpably ridiculous. The first care must be directed towards improving the physical health, if this is at all seriously impaired, by rest, feeding, massage, electricity, exercise, and so throughout the well known category of good servants in such cases. Yet even during this period it is possible to do a good deal by speech and manner to reassure and encourage the patient, and gradually to restore a degree of placidity and hopefulness as will afford a footing for the philosophical considerations presently to be employed.

And when the fit moment arrives, early in some cases, late in others, according to the bodily condition, how is the philosophic teaching to be applied? The answer is easily put on paper. It is to be applied by means of conversations based upon the postulates enunciated above, or such of them as seem to fit most accurately the case in point, or any others which the wit of the practitioner can conjure to his aid. The patient must be brought to know these elementary fragments of physiology and pyschology, and urged to apply them to his own salvation. He must be tempted to abjure self-pity and ensure stoicism is some cases; in others, to realize the incubus of too ready and unjustified apprehensions; in others again to know that vague sensations are but poor guides for accurate inference. And always the aim must be to cultivate optimism and placidity, and the faculty for criticising and viewing with skepticism the rash conclusions concerning the relations of symptoms and diseases to which such patients are commonly given. I refrain from attempting any detailed description of the steps to be followed in these arguments; partly because there is no royal road for every case, partly because the trifling consolations, platitudes, and confidential exhortations, which will help a sick man who knows one is trying to help him, would be laughable if set down formally. Such readers as I may have kept to this point will know without telling of mine how best to suit their arguments to the changing circumstances. Patients vary greatly in the ease with which they are approached, and some are almost unapproachable. But patience and open friendliness will succeed if success is possible. I ought before concluding to say that the method I have tried to describe is hard to use in the out-patient room, partly on account of the time it takes, partly because publicity drives into their shells the patients most likely to be benefited. So I do not advise anyone to begin his experiments in this direction in the presence of other patients or before a roomful of students. With this I leave the subject, hoping that I have made out a case for treating by psychical means the mind-made factor in physical or pseudo-physical illnesses, the neglect of which factor has long been something of an opprobrium to medicine.

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THE QUALITIES OF A CONSULTANT.

The principal teachers in any school of medicine, says *The Lancet*, would probably be nearly unanimous in any endeavor to select from among their students those who were most likely to achieve distinction in some branch of their future calling; but it may be doubted whether they would be equally in accord concerning the still more definite selection of those in whom this branch would be what is commonly known as consulting practice, whether generally medical or surgical, or confined within the narrower limits of a specialty. We should do no more than bare justice in admitting that the physicians and surgeons who, by common consent of the profession and of the public, have come to occupy what may be described as the highest pinnacles of consulting rank, have almost invariably been worthy

of the confidence reposed in them; but we must equally admit that many others who, in the estimation of those best acquainted with their merits and attainments, have been at least equally worthy, have continuously failed to secure equal recognition, even though assisted by the ordinary opportunities of practice and teaching which are afforded by hospital appointments. Consideration of the causes alike of the successes and of the failures indicates that the circumstances of student life and of training may tend to the ultimate development of either issue, but the indication is a rough one. Is the successful consultant born with special qualifications in which the unsuccessful, although in some respects equally learned men, may be deficient; or do the two classes differ only in respect of the bearing upon their respective careers of the "time and chance that happeneth unto all"? In either case is it possible for the ambitious student so to regulate his studies or so to train his faculties that his chances in this particular competition may be improved? Are there any things which, with special reference to this object of ambition, he should strive to do, or any other things, perhaps more important still, which is necessary for him to avoid? What, in short, are the special characteristics of consultants as a class, and in what manner, and to what degree, are these characteristics of a kind to admit of cultivation? The essential preliminaries of adequate professional knowledge, and for surgeons of adequate manipulative skill, must, of course, be assumed to exist as essential foundations in every case.

Taking, in the first instance, the needs of the practitioner by whom the consultant is called in, it may perhaps be assumed that one of the first of them is the support to be derived from the suggestion of a perfectly definite course of procedure, founded upon an equally definite recognition of the true character of the departure from health. In some cases this character may be altogether obscure; in others it may appear to admit of one out of two or more solutions; and in all the first-aid asked for from the consultant is accuracy and completeness of diagnosis, or, in other words, not only the truth, but the whole truth, as far as it is ascertainable. The power of meeting this demand in a satisfactory manner is generally gained in one way—by the most minute possible study of symptoms (whether prominent or obscure) in the wards of a hospital, and by the most accurate possible comparison of these symptoms with the conditions which are disclosed either in the progress of the case towards recovery or ultimately in the post-mortem room. Such a comparison will usually be the more fruitful the less it is associated with hypothesis; the collection of observations should be large before any attempt is made to use them as a foundation for general deductions, lest these, being premature or erroneous, become distorting media for subsequent experience. No two cases of illness are alike, and the differential phenomena are those which it is of the greatest importance to observe, and remember the consultant will constantly be called upon to deal with some apparently obvious malady *plus x*, and his power of determining the value of *x* will be the element on which his success will in all probability depend. But although assistance in the recondite may be what is generally sought from the consultant, the general practitioner and his patient may stand in need of reassurance where there seems to be no reasonable doubt of the diagnosis that has been made. It is often particularly difficult to follow the recommendation that the same course should be pursued that has been tried already, and that patience should be maintained in the face of the seeming failure of that course to remove the conditions. In this situation no one will be found more useful than the rather exceptional person, the consultant who is

developing or who has developed from the general practitioner into the counselor of general practitioners. It is true that throughout the busiest years of a successful career such a consultant may be in no close way in touch with the pathological side of hospital work. He must rely for his appreciation of the merits of many new therapeutic developments upon a much smaller personal experience than he who is in honorary charge of many beds in a great public institution; and his chances of having seen more than an isolated case of rare disease will not be so great. So far he must be at a disadvantage in comparison with the more usual type of consultant surgeon or physician; but, on the other hand, his great experience of domestic treatment of disease may enable him more readily than one whose professional life is largely confined to the wards of his hospital and the walls of his consulting room to estimate how far in an uncertain case a certain treatment should still be persevered in; how far his brother practitioner is right in estimating the general condition of the patient to be no better or no worse over a long term of illness; and, lastly, how far details of nursing and treatment could be made less irksome. There is every room for such consultants, and the practical help which they can be to their fellow practitioners is truly great; with the present great developments of post-graduate work they may well become more numerous as the opportunities of renewing familiarity with the latest hospital experience grow more numerous and effective.

The main throughfares of diagnosis have been marked out by the footsteps of many generations of practitioners; and it is chiefly in the by-ways that opportunity can now be found for the display of exceptional acumen, or for the exercise of powers of observation trained to notice and to interpret the smallest departures from the customary course of things. There can, nevertheless, be no more fatal error than to allow the obvious to divert attention from the possibly obscure, or to lead to neglect of methods of observation not immediately suggested by the symptoms. The consultant can neglect nothing, and his most remarkable successes will often be the results of leaving no element of the case unexplored. This is the answer to all questions about the born capacity of the student to become a consultant, and as to the part played by luck in the attainment of success in such a position. The special characteristics of successful consultants are observation to see and judgment to weigh, and neither can be acquired save by industry. The most able student may start with the best chance of developing what may be termed the defective faculty, but unless his ability is reinforced by painstaking, minute, and laborious work in the wards his *flair* will avail him little. The general practitioner who has arrived at the position of a consultant owing to the gratifying fact that he becomes recognized, first in his own locality, and later through a more extensive range of country, as a man who is worth consulting, would never have arrived at that position had he not made extraordinarily good use of his opportunities when attached to a hospital, and could not maintain that position if he did not take all possible steps to keep himself abreast of both scientific and technical progress. A consultant is not a man who is ready to be consulted so much as a man whom his colleagues want to consult, a fact which sometimes escapes the attention of the laity.

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"How does this noted healer, who cures his patients by touching them, differ from a regular physician?"

"Why, he touches them before he cures them."

PHYSICIANS' LIABILITY INSURANCE PROHIBITED.

A ruling recently made by the Missouri State Superintendent of Insurance is of great interest to the medical profession. It is to the effect that liability insurance, indemnifying physicians, druggists and owners of automobiles against damage claims is contrary to public policy, and he has accordingly issued an order prohibiting such insurance. He takes the position that men who are insured against liability in case they run down a pedestrian are less careful than men without this sort of insurance; and, as regards physicians, that they are likely to treat their patients less carefully and less conscientiously when they know they are protected from the consequences of their incompetence or carelessness. There does not seem to be any express warrant in the law for the action of the Superintendent of Insurance in the matter, and he himself admits that the Supreme Court has never ruled on the proposition. And so, it seems to us, that, granting all he says in opposition to this kind of insurance is true, there is more danger to the public in his assertion of arbitrary power than in the evil at which it is aimed.

Physicians' liability insurance has been written for many years. This fact must have been known to the legislature of Missouri. If, therefore, the legislature, who alone has the right to make laws, has not seen fit to place a prohibition on physicians' liability insurance, it seems to us that it is a case of unauthorized assumption of power on the part of the superintendent to presume to do so.

The representatives of the companies that insure automobiles made a protest against the action of the superintendent and he has removed the ban, so far as automobile insurance is concerned. It is stated that the medical profession did not manifest enough interest in the controversy to aid the agents in an effort to get the ruling rescinded as to themselves, and so the prohibition as to physicians' insurance stands.

It seems that the order does not affect physicians' defense policies, which, according to the superintendent, may be continued to be issued.

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ATTENDANCE ON FAMILIES OF MEDICAL MEN.

A widow sold the practice of her lately deceased husband to a medical man who went to reside in her house with a view of obtaining an introduction to the clientele. During his residence there he attended her cook and children professionally. Later a dispute arose as to the sale of the practice and the widow brought suit to recover the purchase money. The defendant counter-claimed his fees for attendance. The plaintiff pleaded that it was the immemorial custom of the medical profession to attend the families of medical men without charge. Judge Scrutton said: "I am quite clear that although there is no binding custom there is a very general practice among medical men, to their honor, be it said, not to charge the widow and children of a recently deceased medical man for attendance. Where nothing was said, there was an implied contract to pay a professional man his ordinary charges, but that implication fell to the ground where, according to the practice of the profession, the ordinary charges were not made." It will be seen that the learned judge did not extend the custom one inch beyond what was necessary to decide his case. He added: "I think that in a case like the present, if the doctor intends to charge he must say so, thus giving the patient the chance of declining his services and going to another doctor who will not charge." The judge's ruling could not be taken as an authority for the proposition that a medical man is bound, by custom, not to charge for the attendance upon a brother

practitioner, his wife and family. If there is probability of abuse of this kindly custom he will do well to take the advice of the judge who tried this case. —*Indianapolis Med. Jour.*

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KINDLY ADVICE.

A colored man was brought before a police judge charged with stealing chickens. He pleaded guilty, and received sentence, when the judge asked how it was he managed to lift those chickens right under the window of the owner's house when there was a dog in the yard.

"Hit wouldn't be of no use, Judge," said the man, "to try to 'splain dis thing to you all. Ef you was to try it you like as not would get yer hide full o' shot and get no chickens, nuther. Ef you want to engage in any rascality, Judge, yo' better stick to de bench, whar yo' am familiar."—*Zion's Advocate.*

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HER RELATIVE.

A little six-year-old girl had diphtheria last winter and antitoxin was used. The name "antitoxin" seemed to make quite an impression on the child, and she repeated the word over and over again.

Shortly after she had recovered she knelt down one evening at her mother's knee, as was her custom, to say her prayer. This is the way she finished it:

"God bless Auntie Bettie and Auntie Nan and Auntie Margaret—and God bless Auntie Toxin, too."—*Judge.*

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A BLUNDERER.

"What you need, madam, is oxygen. Once every afternoon for your inhalations. They will cost you $4.00 each."

"I knew that other doctor didn't understand my case," declared the fashionable patient. "He told me all I needed was plain fresh air."—*Washington Herald.*

CHEAP DOCTORING.

Cheap doctoring, says the *Pharmaceutical Journal* (England), like everything else that is cheap, is apt to be nasty —sometimes very nasty. Those who doubt this should read the signed letter of a medical man which appeared in the *Times* of last Saturday. Therein it is related that a doctor with a large contract practice had a surgery in which were five casks, each with a tap and an open top for ready filling. One contained solution of Epsom salts; another, infusion of quassia; a third, decoction of logwood; a fourth, soapy water; and a fifth, general rinsings. Other medicines (!) had he none. All his patients were dosed from one of those five! Asked by a brother practitioner how his conscience could allow him to trifle with the lives of men he said: "Well, you see, it is a simple case of 'diamond cut diamond'; the clubs think they are doing me, and I do them instead—that's fair." Another had nothing in his surgery but rows of showy empty bottles on the shelves and three or four cheap and almost worthless drugs in brown paper bags for all his club patients. The correspondent also relates the following incident: "A club doctor was dispensing in his surgery when the following dialogue took place with his temporary assistant: Assistant —What shall I give this man? Doctor—Oh! some little thing—it doesn't matter. Assistant—But what's the matter with the man? Doctor—I don't know; I'd no time to make a diagnosis. Whereupon he shook out a few grains of carbonate of soda into the palm of his hand and gave it to the assistant. It was put into the bottle, which the messenger had brought, the bottle filled with water, labeled, not corked—and that was all." Doctors in a hurry might with advantage adapt to their private practices a method which is said to have been practiced in

our hospitals a good many years ago. In his interesting "History of the London Hospital," Mr. E. W. Morris tells us that there was a time when a receiving-room officer would enter the room and call out, "All with coughs stand up"; "Now all with stomachache stand up." Mr. Morris also gives an instance of a patient who diagnosed her own case: An old woman who obviously had never been in a hospital before enters the waiting room; after glancing nervously around the crowded room, the dear old soul appeals anxiously to the sister-in-charge to know, "Where do yer sit for tumors?" A little thought, if one had time to think, might suggest other time-saving devices. The object of the *Times* correspondent in turning the limelight on doctors' surgeries is to show what may happen under the insurance scheme. It is not for us to quarrel with his methods, for he has published some excellent reasons why doctors should not dispense, not the least weighty of which is that if they ceased to dispense they would have "time to make a diagnosis." It is possible that examples of the kind mentioned could be added to considerably.

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SPOONERISMS.

A "Spoonerism" is the name given in England to one of those involuntary inversions of words that occasionally enliven conversation. As for instance, when the returned traveler tells of "rambling up the scalps" while in Switzerland, and one knows that he means "rambling up the Alps," but has simply perpetrated a "Spoonerism," so called after a canon of New College, Oxford, who achieved a long and exhilarating list of these slips.

Some of the more famous "Spooneriana" are recorded in the *Strand* in the form of a narrative of a returning vicar, who, on reaching the station, left his "rags and a bug" with the porter while he went to the refreshment room for "a bath of milk and a glass bun."

During the course of an address on "Kindness to Animals" to the local branch of the Girls' Friendly Society, he remarked that "in Piedmont, where the sheep were so cherished, a flock would willingly follow a shoving leopard." The meeting in question was very sparsely attended, most of the forms in the schoolroom being unoccupied; the vicar said this was because it had been "roaring with pain" ever since noon, and added that, as it was "beery work speaking to empty wenches," they would close by singing the well-known hymn, "From Iceland's Greasy Mountains."

The tale of his ecclesiastical mishaps is long. One chilly Sunday morning he electrified his hearers by informing them, in the course of his sermon, that he felt a "half-warmed fish" rising in his bosom. To a lady whom he found in possession of his stall in the college chapel he gently observed: "Excuse me, madam, you are occupewing my pie."

Among his other verbal arrangements was his apostrophizing of an amazed audience of farmers as "you tons of soil;" his inimitable rendering of a certain line in "The Burial of Sir John Moore," "As his horse on the ramparts we curried;" his inquiry as to the suitable "tax for a tipsy cab," and his complaint to the stationmaster of the continued unpunctuality of the "town drain."

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FRANCE has a law whch prohibits the sale, display or importation of infants' feeding bottles with tubes, on the ground that they are unsanitary. Violation of the act is punishable by a fine equivalent to from five to twenty dollars for the first offense, and by imprisonment of from one to four weeks for a repetition of the offense, with seizure of the stock of bottles in both cases. Inspectors of pharmacies are charged with the enforcement of the law.

THE SICK ROOM.

MEDICAL NURSING.*

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Digestive Organs.

THE mouth itself is very frequently the seat of disease. We meet an acute stomatitis, perhaps, which is acute catarrhal inflammation of the whole or part of the mucous membrane of the mouth and tongue, characterized by pain, redness, swelling, and disordered secretion. The condition is found most frequently in infants and children. The chronic forms are seen in alcoholics and excessive smokers. Among the causes of acute catarrhal inflammation of the mouth are difficult dentition and the introduction of hot and irritating substances. The condition may also occur secondarily to disorders of the stomach or during the course of an acute infectious disease, like measles, scarlet fever, small-pox. The mucous membrane of the cheeks and tongue has a dark red appearance. very much swollen. The tongue often appears to be too large, too broad to lie between the teeth and the sides showing impressions of the teeth. The saliva is first lessened, then increased. An excessive amount of mucus covers the cheeks, gums and tongue. Patients, when they are old enough, complain of burning, smarting pain. Infants refuse to nurse, or grab the nipple to suck it once or twice and to let it go again. There is a slight fever; children are fretful, sleepless; there is a craving for cold drinks. Diagnosis is easy. Examination of the mouth will disclose the disease. Recovery is the rule.

Treatment consists in removing the exciting cause, changing the diet, exclusion of all irritating substance, and in gently mopping the mouth with a soft wad of cotton and cold or ice water, with a local application of borax water; or, in severe cases, touching up the membrane with a weak solution of nitrate of silver, two grains to an ounce.

Another form of inflammation of the mouth is the so-called aphthous stomatitis (also known as follicular or vesicular), which is characterized by the presence of small, slightly raised spots surrounded by inflamed mucous membrane. The spots appear first as vesicles which rupture, leaving small ulcers covered with grayish baize and slightly elevated red margins. They appear on the inner surface of the lips, on the gums, tongue, mucous membrane of the cheeks. Usually seen in children and are caused by difficult dentition, disorders of digestion, uncleanliness, such as neglect to wash the baby's mouth after nursing.

Scrupulous cleanliness of the baby's mouth, being breast or artificially fed, will prevent a good many ailments of early childhood. You may have heard that it is desirable to clean the mouth before and after each nursing, but I shall take an exception to the cleansing of the baby's mouth after nursing. If the nipple of the breast or bottle and the baby's mouth are taken care of before each nursing, it will be at least superfluous to do it again after the infant gets through with his meal. Such a rigid hygiene is, I think, almost cruel, because as a rule the baby falls asleep after it is through with nursing and you hardly feel like disturbing the infant only to carry out the ironclad routine.

The above described vesicles cause considerable pain to the infant who refuses his food. Other children have pain in talking, masticating, swallowing. Salivation is marked. Saliva dripping from the corners of the mouth, excoriating the skin. There is slight fever, restlessness.

*A series of lectures given to the Seniors of the Jewish Hospital in Brooklyn.

Digestion is impaired; diarrhea often occurs. The appearance of the mouth is so characteristic that you can not confuse it with any other disease of the mouth. Prognosis is favorable and the treatment is simple. Remove the cause; keep the mouth clean; apply a solution of borax and glycerin to the vesicles, or, in obstinate cases, nitrate of silver in solution.

This aphthous stomatitis is entirely different from another form of inflammation of the mucous membrane of the mouth of a parasitic origin, commonly called thrush. It is caused by the growing on the membrane of fungus or oidium albicans. It is commonly seen in children whose general condition is below par, due to improper nutrition, unhygienic surroundings, or debility from acute infectious disease. It is occasionally seen in adults in last stages of tuberculosis, diabetes or cancer. An acute inflammation of the mucous membrane affords a fertile soil for the fungus to grow. We find the membrane of a dark red appearance, in isolated patches, on which whitish points appear which rapidly coalesce in dry areas. They closely resemble curdled milk, but they are not so easily scraped off, and after removing leave an angry raw-looking surface. The white patches begin at the angles and spread rapidly all over the mouth, often to the pharnyx and the esophagus. The clinical symptoms are the same as in other forms of inflammation of the mucous membrane. The diagnosis is self-evident, and the treatment is about the same as in above described forms.

Another form of inflammation of the mouth is gangrenous stomatitis, so called noma, one of the most dangerous diseases of this cavity. It is an acute, rapidly progressive, gangrenous ulceration of the mouth. leading to extensive sloughing of the mucous membrane and underlying tissues, and if not energetically and successfully treated, resulting in a perforation of the ulcer through the cheek to the outside. The cause of this most formidable disease is in all probability a micro-organism, but its character is as yet unknown. It affects chiefly feebly and sickly children during convalesence from acute infectious diseases. Being a severe and rapidly progressing infection, the constitutional symptoms are of a severer nature. The fever rises to 103 or 104; the child has a very sick appearance, and the rapidly increasing ulcer calls for a very energetic treatment which consists in application to the ulcer of nitric acid or active cautery, with a view of burning out the ulcer and infiltrated tissues. The toxemia being great, attention has to be paid to the general condition of the patient which calls for active stimulation and forced nourishment.

One more form of stomatitis is mercurial stomatitis which we observe after administration of mercury. It is not the result of excessive doses of mercury. On the contrary, it is seen after repeated small doses, and the cause lies chiefly in the predisposition and idiosyncrasy of the patient. They complain of a metallic taste in the mouth; then the gums become swollen, red and sore; mastication is difficult; the salivary glands are enlarged and painful and there is an increase in their secretion; excessive salivation. The tongue is swollen, the breath has a foul odor, and if the affection progresses there may be ulceration of the mucous membrane. The treatment consists first in stopping the mercury. In mild cases a plain mouth wash will suffice. In severer ones internal administration of small doses of chlorate of potassium is effectual. A solution of the same salt is ordered to rinse the mouth. As a rule, mercurial stomatitis is cured inside of a week or ten days, although at times the cases are more stubborn and last longer.

An acute catarrhal pharyngitis, acute sore throat, catarrhal inflammation of the mucous membrane of the uvula, soft

palate and pharnyx, may be caused by exposures to cold and damp weather, to sudden changes in temperature, or to direct irritation by hot fluids or food. This condition is seen during the course of scarlet fever, measles, influenza, and other infectious diseases. The mucus of the pharnyx is congested, red and swollen. The secretion is at first lessened, later increased. The parts are covered with thick, tenacious, opaque mucus. The swelling is mostly marked on the uvula due to the relaxed submucous tissue. The uvula becomes thick and long, resting on the root of the tongue. "The palate is down" is a common expression. The onset is sudden with chills and fever, loss of appetite, headache, coated tongue, foul breath, dryness in the throat, painful swelling, and a constant desire to clear the throat. The increased secretion of saliva causes the desire of the patient to continually swallow, which is accompanied by severe pain. Quite frequently there is a pain in the ear, due to the extension of the inflammation to the eustachian tubes. When the inflammation is seated deeper, involving the submucous connecting tissue, it may result in the formation of pus, preventing what is known as retro-pharyngeal abscess. The treatment is symptomatic. An active evacuation of the bowels, a mild antipyretic, will improve the general condition. Locally a gargle or spray of acetate of alum or chlorate of potash, or other antiseptic mixtures bring relief. In severer cases, painting of the inflamed parts with cocaine or adrenalin is very effective. Of course, when there is an abscess it has to be treated surgically and without delay. The evacuation of the cavity gives immediate relief and prevents the pus boring its own way through the tissues.

Tonsillitis.

Acute tonsillitis, quinsy, sore throat, is an inflammation of one or both tonsils with a tendency to suppuration. Exposure to cold predisposes to the disease, which is caused by micro-organisms of the streptococcic or staphylococcic variety, and ought to be placed in the group of acute infectious diseases. The tonsils are the open door for infection and of a good many severe and protracted diseases, at times, of a fatal character. I shall recall to you the unfortunate victim who occupied room 59. In the middle of December, 1907, she started with a mild attack of tonsillitis. She didn't consider herself seriously ill, and didn't apply for treatment. A few days later she was seized with a severe pain in the ear, which was diagnosed as an acute inflammation of the middle ear, and was promptly relieved after the abscess had burst through the drum. She was apparently on the sure road to recovery, when one night she experienced a pain in the left groin. The pain didn't leave her; was of a severe burning character and confined her to bed, and she kept on that bed for forty-eight weeks. The inflammation of the joint resulted in an abscess of the groin, extending to her sacrum and anterior and posterior surface of the thigh. She had been operated upon several times. She has been feverish all these long eleven months. She developed secondarily an inflammation of the kidney, a secondary anemia, a degeneration of the heart muscle, a chronic catarrhal inflammation of the gastric intestinal tract, and wound up with a liver abscess which carried her away on the 22d of November, after almost a year of continual suffering; and all of this the result of a plain everyday sore throat. Of course, such an unfortunate course of the disease is rare, but tonsillitis, quinsy, sore throat. quite frequently cause a secondary inflammation of the kidneys, an acute nephritis, and acute endocarditis, and acute middle ear inflammation, a mastoiditis, etc. I relate this to you to impress on your mind that a sore throat or tonsillitis shall not be regarded as a minor ailment, but

as an infection, the outcome of which can not be predicted from the start.

The onset is usually sudden, with a chill or chills, an elevation of temperature, and all the other constitutional symptoms common to other infections. Locally we find one or both tonsils swollen, projected from their bed; the surface is often covered with small yellowish points which are the result of exudation of juicy-looking material projecting from the crypts of the tonsils. Sometimes the exudates from single crypts coalesce in a larger membrane which closely resembles the diphtheritic tonsillitis, and can only be differentiated by a bacteriological culture. These juicy-looking masses of membrane consist mostly of micrococci and epithelia of the mucous membrane. The patients are to be kept in bed, given a purgative, treated symptomatically according to the height of temperature and other general symptoms. Locally, a gargle of some astringent application to the tonsil will relieve the inflammation and congestion. Not only during the febrile period, but also after the temperature comes down to normal, the patients are to be carefully watched for possible complications, and the disease treated as any other infectious disease which leaves in its trail at times irreparable damage.

The esophagus is rarely affected. An inflammation of the tube is due to action of some chemical poison or alkaline, swallowed intentionally or by mistake, or by swallowing very hot fluids, causing in both cases a burn. It is followed by a scarification of the ulcerated mucous membrane and results in a stricture. Such strictures are treated with bougies of gradually increasing size, thus producing a mechanical dilatation.

The above inflammatory stricture is a benign one in contrast to malignant one, which is caused by the growth of a cancerous mass, usually located in the lower end of the esophagus at the cardia. The malignant stricture of the esophagus can not be treated mechanically because the introduction of sounds produces irritation and favors the growth of cancer. In cases of cancer of the esophagus the only relief is by operation, by an artificial fistula in the stomach through which the patient is fed.

Gastric Catarrh.

Acute gastric catarrh, acute gastritis, acute dyspepsia, gastric fever, bilious fever, is acute catarrhal inflammation of the mucous membrane of the stomach, characterized by feverishness, loss of appetite, nausea, vomiting, pain in the epigastrial region or discomfort in the abdomen. In severer forms they start with a chill and a febrile reaction where the temperature may rise to 102 or 103. The tongue is heavily coated, vomiting is frequent, containing the beginning particles of food, later mucus and bile. There is constipation, frequently colicky pains and diarrhea. Mild attacks do not last very long—a day or two. In the severere forms where the gastric mucosa has been damaged more deeply and the secretion of gastric juice reduced to a minimum, we have got to be very careful in the selection of food after the acute symptoms have subsided and begin with small quantities of milk and farinaceous decoctions which call for minor digestive activity. Even at times these foodstuffs are not well tolerated, and it is advisable then to order them peptonized, to substitute artificial digestion for the natural one. A course of tonics, stomachics, bitters, which stimulate the secretory powers of the gastric mucosa, are indicated in the period of convalescence, after a severe attack of indigestion.

Chronic Gastric Catarrh, Chronic Gastritis, Chronic Dyspepsia

Are the result of repeated attacks of acute dyspepsia, acute indigestion, of habitual and excessive use of alcoholic beverages, of too much coffee and tea drinking, and of too much ice water

during and between meals. The habit of serving ice water at the dinner table ought to be energetically fought against, because this ice pitcher is responsible for a good many victims of chronic dyspepsia, so prevalent in our country. Hot cakes, hot bread and pies, so liberally dispensed at the lunch-room counters, are also prominent causes. Fast eating, defective mastication, "hurry-up quick" luncheons, have a multitude of victims. The food not thoroughly masticated is not prepared for digestion by the gastric juice and acts as an irritant to the mucous membrane, causing in the course of time a change in the chemical constituents of the gastric juice.

Another frequent cause is the abuse of tobacco, excessive chewing. Next to errors and diet and habits as to eating and drinking, constitutional diseases are responsible for chronic gastric catarrh, like anemia, tuberculosis, gout, diabetes and Bright's disease. The chronic dyspepsia is the result of an impaired circulation in diseases of the heart, lungs and liver, where a chronic venous stasis exists in the vessels of the mucous membrane of the stomach, and the gastric glands do not produce a normal gastric juice, and therefore digestion suffers. The symptoms of chronic catarrh are persistent for an indefinite period and vary from time to time, depending upon the extent of the damage done to the secreting mucous membrane. Loss of appetite, disagreeable feeling of fullness in the stomach, tenderness in the epigastrium, prominence of the upper part of the abdomen, caused by distension, and occasionally nausea and vomiting of undigested food after meals, or of a glairy, colorless fluid when stomach is empty. The tongue is usually heavily coated, thirst is often constant, and there is craving for water or stimulant. Burning at the pit of the stomach and under the breast bone; "heartburn" is very common. The bowels are constipated; urine high colored, and contains a large amount of phosphates and urates. In general the circulation is poor, mental condition shows symptoms of depression, sleep is disturbed, and occasionally there are attacks of vertigo. All these symptoms are due either to a deficient secretion of gastric juice or to a lessened percentage of hydrochloric acid, or to an excess in mucus, the result of diminished peristalsis of the stomach which favors fermentation and decomposition of the intaken food.

Diagnosis presents quite some difficulties, and an exact one can only be made after a thorough examination of the contents of the stomach after a meal. Only then can we appreciate the changes which have occurred in the glands secreting the gastric juice, and these mechanical findings will guide us in making our prognosis in cases of chronic gastric catarrh, which if persisting for years can hardly be cured. The pathological changes which take place in the mucous membrane can never be restored to normal, but a general improvement will follow if the patient religiously adheres to a diet intelligently prescribed after a thorough examination in accordance with the pathological findings.

The lecturer on dietetics has fully acquainted you with the digestive and nutritive qualifications of the different foodstuffs, and I shall not try to encroach on his field by formulating a diet list for chronic dyspeptics. I shall only impress upon you the fact that success in treatment of such cases is only possible by carefully and intelligently regulating the quality and quantity of food taken in by the patient, and also the intervals between meals.

* * *

HOWELL—"Edison says that we sleep too much."

Powell—"Well, it isn't his fault; he has invented enough things to keep us awake."

REFRACTION.

THE PUPIL IN HEALTH AND DISEASE.

By Henry R. Swanzy, A. M., M. B., F. R. S. C. I.
Surgeon to the Royal Victoria Eye and Ear Hospital of Dublin, Ireland.

PART II. THE PUPIL IN DISEASE.

MYOSIS may be caused by a diseased process irritating the pupil-contracting center or nerve fibers, or by one causing paralysis of the pupil-dilating center or fibers, or by a combination of both. Either cause alone would produce a medium myosis; a combination of the two would give a maximum myosis.

Irritation Myosis.

Irritation myosis is found: (*a*) In the early stages, at least, of all inflammatory affections of the brain and its meninges; in simple, tubercular and cerebrospinal meningitis. When, in these cases, the myosis gives place to mydriasis, the change is a serious prognostic one, indicating the stage of compression, with paralysis of the third nerve. (*b*) In cerebral apoplexy the pupil is at first contracted, and afterward dilated. (*c*) In the early stages of intracranial tumors situated at the origin of the third nerve or along its course. (*d*) At the beginning of a hysterical or epileptic attack. (*e*) In tobacco poisoning, probably from stimulation of the pupil-contracting center by nicotine. (*f*) In persons following certain occupations, as the result of long-continued effort of accommodation (watchmakers, jewelers, etc.), the pupil-contracting center being subject to an almost constant stimulus. (*g*) As a reflex action in certain nervous conditions affecting the fifth nerve.

Paralytic Myosis.

In paralytic myosis the pupil reacts well to light, and on convergence, but does not dilate upon application of sensitive or psychical stimuli; mydriatics dilate such a pupil only partially, but myotics contract it to the maximum. Paralytic myosis occurs in spinal lesions above the dorsal vertebræ, in injuries and inflammations, especially of the chronic type. Dr. Argyll-Robertson was the first to point out that in locomotor ataxia, the pupil, although contracted and not responding to light by further contraction, does become more contracted on convergence of the visual axes, or accommodation. The myosis is a sign, and an important one, of disease of the posterior columns of the cord; while the defective reaction to light, with retained contraction upon convergence, indicates disease at some distance from the spinal cord.

Paralytic myosis is also found in paralysis of the insane. In acute mania the pupil is generally dilated, and when this mydriasis is changed for myosis, approaching general paralysis may usually be prognosticated. Myosis, following on irritation mydriasis, is also found in myelitis of the cervical portion of the cord. In bulbar paralysis, if paralytic myosis occurs, we know the disease is complicated with brain lesions.

Mydriasis.

Mydriasis may be caused by a disease process giving rise to irritation of the pupil-dilating center or fibers, or by paralysis of the pupil-contracting center or fibers.

Irritation mydriasis is characterized by a moderately sized pupil, contracting somewhat to light and on convergence, but not dilating on application of sensi-

tive or physical stimuli; easily dilated to the maximum by mydriatics, but with difficulty contracted by myotics. It occurs: (*a*) In congestion of the cervical portion of the spinal cord, and in spinal meningitis. (*b*) In the early stages of tumors of the cervical portion of the spinal cord. (*c*) In cases of brain tumors, and other diseases causing high intra-cranial pressure. (*d*) In the spinal irritation of anemia in persons recovering from wasting diseases. (*e*) As a premonitory sign of locomotor ataxia. (*f*) In intestinal worms, owing to the stimulation of the sensory nerves of the bowels. (*g*) In psychical excitement, such as mania, melancholia, progressive paralysis of the insane, when it is often present in one eye, with myosis in the other.

Paralytic Mydriasis.

Paralytic mydriasis exhibits a moderately dilated pupil, reacting to sensitive and psychical stimuli. The reaction to light and convergence varies according to the location of the diseased process causing the trouble. If this lie between the iris and the pupil-contracting center, the direct reaction to light is lacking and also the reaction to convergence; but if it lie between the retina and the pupil-contracting center, the direct reaction to light is lacking, but the convergence reaction is retained. The pupil can be dilated to the maximum with mydriatics, but not contracted much by myotics.

Paralytic mydriasis occurs: (*a*) In progressive paralysis, where previously there was myosis. (*b*) In various disease processes at the base of the brain involving the root of the third nerve. (*c*) In a late stage of thrombosis sinuses. (*d*) In diseases of the orbit which cause pressure upon the third nerve. (*e*) In glaucoma. (*f*) In intra-ocular tumors which have attained a considerable size.

When the paralysis is due to the non-transmission of the stimulus of light to a healthy pupil-contracting center—that is to say, when it is the optic nerve that is at fault—contraction of the pupil will take place only on convergence of the visual lines.

Hippus.

Hippus is an alternate expansion and contraction of the pupil, due to a lack of coördination in the nerves and muscles of the iris, and is seen in certain grave diseases of the brain and spinal cord, such as multiple sclerosis, acute meningitis, apoplectic attacks followed by tremor and spasms of the paralyzed muscles, and in neurasthenia.

* * *

MINER'S NYSTAGMUS.

In a recent issue of the *British Medical Journal,* H. S. Elworthy, who says he is an inspector of injured workmen in one of the English coal mines, gives his observations of this affection. His inquiries have elicited the information that miners in tin and lead mines are not afflicted; miner's nystagmus is a disease peculiar to coal miners. He has come to the conclusion that the absence of color is responsible, believing that the cause is fatigue of the eye, resulting from working by artificial light with a black background and nearly black surroundings.

Matters are made worse by the fact that the majority of miners prefer to work in the day and thus the greater part of the year it is dark when they get up and go to work and dark when they leave off work; they get a minimum of daylight and the opportunity of seeing a variety of colors by daylight, which means physiological relief to the eye. Another cause of fatigue to the eye is when miners have to walk a mile or more underground to reach the "face" where they work. They proceed more or less in single file, each carrying a lamp which gives out light in every direction. The result is that the miner walking behind

another gets the glare of that lamp in his eyes all the time.

The author confesses that he can give no opinion as to the theory that nystagmus is produced by working while lying down; but this theory is weakened by the fact that other underground workers, such as haulers, timbermen and repairers also suffer from this anomaly.

The only class of workers in coal mines that seem immune is the hostlers, and that is because the stables are whitewashed. That it is not due to imperfect fusion is shown by its occurrence in one-eyed men. The only essential factor seems to be exhaustion of the eyes from working in the general blackness without any color relief. Regarding treatment he says that working underground in daytime is a mistake, as the miner in doing so loses his opportunity of refreshing his eye by looking at colors in daylight, and so, in a measure, compensating himself for working by artificial light without color relief.

To prevent unnecessary fatigue to the eyes removable shades should be provided for the lamps, so that they give out light in front only. These should be used in going in and out. When at the "face" they could be taken off, so the light would not be interfered with. With the shade on the man simply wants to see the ground in front of him and the roof to prevent him knocking his head.

Finally, he suggests an original method of prevention in the shape of some sort of a color scheme in coal mines, substituting by artifice sufficient color to make good the deficiency. He proposes that the roof, the leeward sides of the posts and collars, the cogs and sides of the alleyways be colored with some light but inexpensive wash—whitewash, or preferably green or other varied colors. The coloring would have to be done daily, and would cost money; but nystagmus costs money.

EYES AND EARS OF SCHOOL CHILDREN.

Sight and hearing, says F. A. Kiehle in *Northwest Medicine,* are the two principal senses of the human body. They are the great routes along which must come most of the child's knowledge. They are the highways of entry to his brain. The more clearly he sees and the more distinctly he hears the clearer are the impressions he gains of the outside world and the more definite his knowledge. Many a child is considered stupid who is only unfortunate in not possessing the normal amount of sight and hearing. Once give this child a bad name, increase his embarrassment and his consciousness of his inferiority and you have done him a lasting and an irreparable wrong. These are often children of poorer parents to whom every month of schooling means much. Though nature has endowed them with as keen minds as their companions, still, suffering discouragement after discouragement, they are prone to give over their schooling at even an earlier period than would otherwise be necessary. We have done them wrong. Hazy impressions contribute to the formation of hazy memory, and these experiences happening not once, but daily and many times a day, the child's whole life through school and afterwards suffers by reason of a deficiency by no means his fault. The teacher, perhaps inexperienced and untrained in the art of analyzing the child-mind, is prompted to classify her pupils on these insufficient grounds as "bright" or "dull." The child's mind must be in a receptive condition to absorb and appropriate the lessons that are brought to it. If by reason of poor health the pupil can attend only part of the time, or if, when he does attend, he gets but partial benefit from his education by reason of poor receptive faculties, just that much of the State's effort to make him an intelligent and self-supporting citizen is lost. So today in many localities there has been

provided regular and thorough examination of all pupils. The teachers themselves are urged to be on the watch for signs of physical ailments in the children.

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MUSCLE TESTS.

All the tests for the detection of muscular deficiency, says *The Optician*, depend on the fact that when single binocular vision is interfered with, the desire for single vision ceases to exist, and both eyes rotate in the direction in which the strongest acting muscles pull them. All the tests depend upon destroying binocular single vision, and the Maddox rod is one of the simplest and most convenient devices for that purpose. It consists of a short glass rod, mounted in a metal disc. Its introduction constituted a new departure, as it is the first contrivance in which the dissociation of the two eyes is produced by altering the shape of one of the images, instead of simply displacing it, as is the case with von Graefe's prism test, or with the Maddox double prism.

A distant flame, with the rod before one eye, appears converted in a long streak of light, which there is no temptation to regard as a false image of a flame, especially if red glass be used. The streak is always at right angles to the rod. To test the lateral balance, the rod is placed horizontally, so that the streak is vertical. If the streak passes through the flame, equilibrium is perfect, but if otherwise, the nature of the diplopia (homonymous or crossed) shows whether there is esophoria or exophoria, and the distance of the streak from the flame is an indication of the amount of latent deviation. The prism, base out or in, that is able to bring the streak through the flame is the measure of it. The vertical balance is tested in a similar way, the rod being placed vertically, so as to give a horizontal streak.

It may be interesting to state that the rod test was suggested to Dr. Maddox by a faint streak of light uniting the two false images of a flame viewed through a double prism. This streak is due to the fact that the edge of the prism is not a mathematical line, but, from imperfect manufacture, is a rounded ridge. From this, it was easy to deduce that a glass rod would produce a better streak by acting as a strong cylindrical lens.

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THE SYMPTOMS OF GLAUCOMA.

In a lecture before the Liverpool Medical Society by A. A. Bradburne, glaucoma is described as a condition, not a disease, being one of the physical signs which accompanies several diseases of the eye. He points out that there are cases of glaucoma in which no increase in ocular tension can be discovered, and that it is a great error to rely on the so-called glaucomatous cupping of the optic disc. He points out a great many signs, objective and subjective, of the disease, which are very obvious in cases which have reached practically the incurable stage, but seems to think that the most valuable test is that of the perimeter. He states that a very easy way to make such a test is to drive a white-headed pin into a blackboard about forty inches from the patient and on the level of his eye; on this he is to concentrate his attention. He then takes a piece of black thread, slips a white bead on it, and makes a loop at each end, one to pass over the central pin, and the other to be held taut by one hand. The white bead can be pushed along to any point on the thread and the perimeter test made in any and all meridians. He states that if the field of vision is unaffected, and there are no other symptoms of glaucoma, such as halos seen around lights, the disease can not be present.

MEDICAL PHARMACY.

HIGH PRICES OF DRUGS.

THE *Western Druggist* states that the causes of the advancing market are numerous. One of them, doubtless, is the practical working of the pure-drug laws. If the druggist has to pay more for some imported crude drugs, he gets a better article for his money. But other causes have tended to create a constantly advancing market. The present enormously high price of opium compared with the price during recent years, is caused by a failure of the crop in Turkey. Whether the war in Italy will cause a further increase in prices remains to be seen. The market for opium has been nearly stationary during the last month.

The uprising in China has acted as a further stimulus to an already advancing market in rhubarb, Chinese cantharides, essential oils of star anise and cassia and, to some extent, camphor. The hot, dry summer in Europe, as well as in this country, has caused decided advances in prices of many crude drugs, such as seeds, roots, leaves and barks. Among these drugs might be mentioned valerian, burdock and yellow dock roots, arnica, calendula, chamomile and lavender flowers, and henbane, digitalis and belladonna leaves. The increase in prices on all of these drugs range from 50% to 100%, considerably more than the average profit which the retail druggist makes.

The market for chemicals also shows, in many particulars, constant and decided advances. These advances in prices should be familiar to the druggist. As stated, the advances often amount to more than the average profit of the retailer, and neglect to study the market changes may frequently result in sales at a loss.

Importers and wholesalers are not able to control prices of imported crude drugs, and are unable to make guaranteed prices to the retailer on any of these drugs. The reason for this is the, to us, peculiar law of all the countries of Europe, except Great Britain, by which a grower or dealer in crude drugs may repudiate a contract if bad weather or other "act of God" interferes with a good crop. This practically allows the seller the opportunity to fix his own prices as, if the crop is short, he may repudiate his contracts and charge a higher price for the drugs notwithstanding the fact that he may be filling current orders from warehouses stocked with a previous crop.

OCULAR MANIFESTATIONS OF ARTERIOSCLEROSIS.

George Alson Suffa, in the *New England Medical Gazette,* believes that in a general way an appearance of premature old age suggests that the blood vessels are not properly performing their function and should lead to an immediate investigation of the blood pressure. If found to be high the probabilities are strong that we have to do with a case of arteriosclerosis. Early symptoms are persistent headache, eye-pains or inability to use the eyes even after the correction of refractive and muscular errors, and general muscular fatigue.

As the capillaries of the retina are the smallest in the body and the delicate function of the retina so dependent upon its blood supply, we should expect the eye symptoms to be among the earliest and should look with suspicion upon such manifestations as specks before the eyes, scintillating scotomata, unexplained dimness of vision and paroxysmal blindness, often produced by spasm of the

diseased retinal vessels. The specks of which these patients sometimes complain may actually exist as small vitreous opacities, the result of slow inflammatory changes in the intima of the vessel walls. A sluggish pupillary reflex, easy failure of the accommodation, especially if unequal, persistent unexplained vertigo, transitory ptosis and sudden changes in the action of the extra-ocular muscles, manifest as insufficiencies, especially when accompanied by increased blood pressure, demand a careful ophthalmoscopic examination in order that the visible retinal blood vessels may be observed for early changes such as have been enumerated.

Such approved methods as regulating the patient's habits of life, the prohibition of alcoholic beverages, tobacco, tea, coffee and strong meats, will commend themselves to the wisdom of every physician who has these cases under his care.

The author's experience leads him to the conclusion that most cases of arteriosclerosis are unrecognized until a crisis occurs. It then remains for the physician to act the part of jailer both by restricting the activities of the patient and by depriving him of most of the things that made life worth living. Such an unfortunate is little better than a prisoner sitting in the cheerless cell of his enforced privations and awaiting the impending stroke of doom.

The author's reason for writing this paper is the imperative necessity for watchfulness for the earliest symptoms of this subtle disease and the further need that every physician should not only know of the inestimable value of the testimony of the opthalmoscope in making an early diagnosis, but that he should have it so frequently and so forcibly brought to his attention that he will invariably think of it when the symptoms present themselves.

NEW REMEDIES.

Bismuth Iodoresorcin-sulphonate is a brown amorphous powder, introduced as a powerful antiseptic.

Cyclorenal or Zyklorenal is an ointment, containing cycloform (anesthetic), adrenalin, Peruvian balsam, and koryfin, used in anal fissure (Schäfer, Berlin).

Helgotan is bromo-tannin methyleneaminobromide, recommended as an antiseptic dusting powder.

Hyperol is the name given to a "solid hydrogen peroxide" composed of hydrogen peroxide and urea, with citric acid. It occurs as powder or tablets, and is used for extemporaneous preparation of hydrogen peroxide, in which respect it is similar to *Pergenol* (see *Prescriber*, November, 1911, p. 289).

Insipin is the sulphate of the diglycollic ester of quinine, containing 72.2% of alkaloid, and introduced as a tasteless form of quinine. It is insoluble in cold water, but may be dissolved by the addition of sulphuric acid.

Iodostem is a preparation of grape juice, in which iodine exists in loose combination with tannin. It is recommended in gout, rheumatism, and tubercular affections.

Liqual is a solution of aluminum acetate and hydrogen peroxide, used as a dressing for wounds, etc.

Metaferrin is described as a new preparation of albuminate of iron. (*Med. Klinik*, July 16.)

Neurotone is a preparation said to contain the "combined glycero-phosphates of lime and soda."

Orthonal, described as a new anesthetic, is simply a solution of cocaine (0.5%) and alypin (0.75%), with 6% of adrenalin solution (1:10,000).

Prothæmin is a tasteless brown powder, said to contain iron and phosphorus in organic combination. It is recommended in anemia, chlorosis, neurasthenia, etc. (Goedecke & Co., Leipzig).

Saliformin is a salicylate of hexamethylenamine. It is given for cholelithiasis in doses 0.5 to 0.75 gram (8 to 12 grains) three or four times daily.

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INHALANTS.

J. D. Albright, in the *Physicians' Drug News,* gives some formulæ for inhalant mixtures for catarrh and similar troubles. He points out that the so-called menthol inhalers afford great relief in cases of cold in the head, and are also of value in chronic nasal catarrh on account of their antiseptic action. These consist of a glass tube open at either end and containing menthol, either alone or in connection with other ingredients of known value. The tubes cost about $1.00 per gross and the complete inhaler can be produced at a very low cost. They sell at ten to twenty-five cents each.

The following formula, which is original with me, combines several of the best known remedies, and will be found highly satisfactory:

Menthol, crystals	2 drachms.
Thymol	5 grains.
Eucalyptol	1 drachm.
Beechwood creosote	15 drops.
Alcohol	4 ounces.

Mix well.

Catarrh Jelly.

1. White petrolatum	1 pound.
Menthol	6 drachms.
Thymol	10 grains.
Eucalyptol	2 drachms.

Melt the petrolatum on a water bath, and add the thymol and menthol, stirring until dissolved. When nearly cold mix the eucalyptol thoroughly through the mass. This makes a very strong medicine and the quantity of petrolatum may be increased if desired.

2. Petrolatum	10 pounds.
Oil of wintergreen	1 ounce.
Oil of peppermint	4 ounces.
Camphor	4 ounces.
Iodoform	1 drachm.
Carbolic acid	10 drops.

Melt the petrolatum on a water bath, add the camphor, and when dissolved remove from fire. Incorporate the remaining ingredients when the mixture is nearly cold.

Catarrh Snuffs.

1. Cubebs in fine powder	1 drachm.
Powdered sugar	2 drachms.
Powdered menthol	12 grains.
Powdered boric acid	½ drachm.
Oil wintergreen	10 drops.

Have all in the finest possible powder and mix thoroughly.

2. Aluminum acetate	1 drachm.
Menthol	1 drachm.
Acetanilid	1 drachm.
Bismuth subnitrate	7½ ounces.

Have all in the finest possible powder and mix intimately.

3. Boric acid	2 drachms.
Aristol	2 drachms.
Bismuth salicylate	2 drachms.
Common salt	2½ ounces.
Powdered elm	12½ ounces.

Powder as finely as possible, mix intimately and stir through bolting cloth.

4. Menthol	15 grains.
Thymol	15 grains.
Eucalyptol	15 grains.
Orris root	25 drachms.
Sod. chloride (common salt)	25 drachms.
Hydrastine hydrochloride	15 grains.
Powdered elm	25 ounces.

Mix as directed for No. 3.

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RECTAL FEEDING IN DIPHTHERIA.

In cases of diphtheria, where, for various reasons, it is difficult to feed the child by the mouth, Fischer (*Diseases of Infancy and Childhood*) recommends giving the stomach a complete rest and administering the following nutritive enema:

Milk, predigested, ʒi (30 c.c.).
Starch water, ʒi (30 c.c.).
Laudanum, m. i (one drop).

Not more than the above quantity should be injected slowly through a colon tube, after both colon and rectum have been cleansed by a soap-suds enema. If this is well retained it may be repeated every four hours, and the yolk of a raw egg may be added.

RHUBARB AND SODA.

According to Wienstein (*Med. Record*) the proper time to administer rhubarb and soda depends on what it is desired to accomplish. Alkali bicarbonate, administered before a meal, causes

an increased secretion from the gastric glands. After a meal, it neutralizes the acidity of the stomach. Rhubarb causes an augmented secretion from the intestinal glands. The effect, therefore, of rhubarb and soda, when administered before a meal, is to cause a very much increased secretion from all the glands of the gastro-intestinal tract. Through this augmented secretion the whole tract gets flushed out somewhat like an autolavage.

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SKIN PASTES.

The following is a useful stiff paste which may be combined with other medicaments for surface medication:

Zinc oxide,
Soft paraffin, aa., equal parts.

A useful absorbable basis for combining with other ingredients is the following:

Hydrous wool-fat,
Glycerin of starch, aa., equal parts.
Oil of rose, q. s.

Dreuw recommends the following as a strongly desiccative paste which forms a closely adherent coat. It can be suitably medicated, and is useful for all weeping skin diseases, such as eczema, pemphigus, etc.:

Sulphur depurat..... 10.0
Ichthyol .....5.0 to 10.0
Zinci oxid,
Paraff. moll.,
Adipis lanæ hydros., aa., p. æq. ad 100.0

M. ft. pasta.

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MIXTURES OF DRUGS.

Mixtures of different drugs, when these drugs have the same physiological action, have an action equal to the sum of the ingredients, says Burgi (*Berlin Klin. Woch.*), but when their physiological action is of a different character the potency of the mixture is very much increased, and smaller doses are necessary. Thus, mixtures of hypnotics of the same series are not more active than would be expected from the ingredients, but a combination of, say, morphine and urethane would be much more potent on account of the different action of each ingredient.

The same rule holds good for other drugs; thus caffeine and theocine are less potent in combination than caffeine and digitalis.

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CHILBLAINS: SOME USEFUL PRESCRIPTIONS.

1. The following application forms a protective skin, not unlike collodion, on the surface of the chilblain:

Acid tannic, ʒii (8.0 gm.).
Spirit. rect., ʒiv., (16.0 c.c.).
Acid, carbolic, m. xxiv, (1.5 gm.).
Aquam, ad ʒi to 30.0 c.c.

Solve. Sig.: "Paint on the chilblains night and morning."

2. A cream, which acts as an agreeable and efficient stimulant to the circulation, is as follows:

Menthol, gr. xv, (1.0 gm.).
Methyl. salicyl, ʒii, (8.0 gm.).
Adipis lanæ hydr., ʒvi, (24.0 gm.).

Misce. Sig.: "Apply a small quantity frequently, rubbing in gently till absorbed."

3. The following ointment has been found efficacious in broken chilblains:

Plumb. acet., gr. x, (0.6 gm.).
Camphor, gr. v, (0.3 gm.).
Ol. cajeputi, gtt. x, (10 drops).
Ung. acid. carbolic, ʒvi, (24.0 gm.).

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BITTER TONIC APPETIZER.

Huchard (*Bull. gén. de thérapeutique*) recommends the following as a useful bitter tonic for improving the appetite:

Tinct. cinchonæ,
Tinct. calumbæ,
Tinct. gentianæ,
Tinct. rhei,
Tinct. nucis vomicæ, aa., partes æquales.

M. Sig.: "Fifteen drops in a little water before meals."

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MRS. BACK BAY—"I shall want you to be dressed by 3 o'clock, Ellen, to receive any friends that may call."

Ellen—"Oh, lor, mum! Ain't you goin' to be in?"

ELECTRO-THERAPY.

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THE FARADIC CURRENT.

BY J. A. BURNETT, M. D., Marble City, Okla.

THE faradic current is mechanical, and so is vibration from a vibrator mechanical. The difference is the vibrator is mechanical massage, while electricity is simply contracting and expanding of the muscles, etc. There is not a meter made that will register the faradic current.

Some say that neither pole is positive or negative in a faradic battery, while others say that the poles are both positive and negative alternately. The discovery of faradic electricity was about 1830 by Faraday. The faradic current should not be used through the clothes. The faradic apparatuses are not very easy to get out of order. A faradic apparatus should last a lifetime if it is a good apparatus and taken care of. Faradic electricity can be obtained from either batteries or from the electric light current. If the electric light current is not direct a converter must be used to convert it into a direct current. The difference in the direct and alternating current is simply that the direct current has two polarities, negative and positive, and always remains the same.

The alternating current is a current without polarity. One phase of the current might be positive on the same line and the next phase might be negative. It makes quite a difference in electrical apparatuses as to what current is used.

The most convenient current is the direct. I notice that most all of the cities are supplied with the alternating current, or at least many more have the alternating current than the direct.

One writer says: "I can take my faradic battery and by proper application can produce an operation of the bowels quicker than most cathartics, and show the bile has been acted on as well."

In an article, "The Mild Faradic Current," by Dr. C. Woodward, March, 1905, *Chicago Medical Times*, he says: "Long experience has convinced the writer that in electricity we have an agent for producing relaxations following acute paralysis and various spasmodic conditions of the system that can not be obtained early enough by therapeutics to save life."

Dr. Woodward reports a case in this article of a woman, age forty-three, with impaction which resisted the influence of cathartics and enemas for days, and then strychnine and belladonna for forty-eight hours, suggested by a consulting physician, was then relieved by placing the anode into the rectum and the cathode over the abdomen, and a mild current applied for two hours. In fifteen minutes after cessation of the current she had a copious evacuation of the bowels. The doctor reports several other interesting cases of similar nature in this article.

For torpid liver Dr. St. Clair gives the following: "Take your faradic battery and let the patient hold one electrode in the hand, and with the other pass it thoroughly over the liver. Give a current as strong as patient can take without flinching. Keep up for fifteen minutes. Repeat the dose every twenty-four hours, for two or three times, and you will find the stools will show its action on the liver as well as if you had given a full dose of calomel."

A writer several years ago states that he has several times cured sciatica with the faradic current by applying the positive pole along the sciatic nerve in the back part of the thigh, and the negative pole at the foot by means of a foot plate. The current is not used strong enough to cause pain. He used it five to ten minutes to each limb, once or twice each day.

In Dr. T. J. Lyle's *Materia Medica,* in chapter on electro-therapeutics by Dr. J. M. Thurston, I find the following statement: "Very small volume (amperage) and exceeding high tesion—this most valuable current is obtained with very fine wire (36 or 40) and 2,500 to 3,000 feet long, and is usually used with very rapid interruptions, 3,000 to 5,000 per minute. It is the nervine current. Used with the positive pole at the back of the neck and the negative at the feet with a sitting of forty to sixty minutes, it most effectually relieves all nerve tension, pains, aches and general muscular soreness.

"Applied locally it relieves local congestions, engorgements, tenderness and irritation. In ovarian irritation, congestions, acute or chronic hypertrophies, or other enlargements of uterus and appendage; chronic enlargements of liver, spleen and kidneys; congestion, pain and tenderness of the stomach and bowels."

If a faradic current is used for the relief of pain it is essential to have a fine wire—36 to 40—and one of great length. It should be used strong enough, but not strong enough to be uncomfortable, and plenty of time should be given to the treatment.

Most writers when writing on the faradic current speak of the positive and negative poles, which is erroneous. The faradic current is of great value when a good instrument is used in the right manner.

ELECTRIC METALLIC COLLOIDS AND THEIR THERAPEUTICAL APPLICATIONS.

By B. G. Duhamel, M. D.,

Of the Faculty of Medicine of Paris.

In *The Lancet.*

The introduction of the metallic colloids into medicine constitutes a new departure in therapeutics the significance of which does not appear as yet to be generally recognized. Under these circumstances a brief review of the physical qualities, physiological properties, and therapeutical effects of these remarkable bodies presents a certain practical interest.

A colloid is usually defined to be a substance that will not pass through an animal membrane, of which gelatin, albumin and dextrine are typical instances. Until recently, indeed, this was about all that was known of them, although, as the animal organism is wholly composed of colloids, it is only by a thorough knowledge of their interaction that the reactions taking place in the human organism can be understood.

The discovery that it is possible to convert certain metals and metallic salts into the colloid state and the careful study of these metallic colloids, however, show that they are reduced to infinitely small particles, so small as to be visible only by the aid of the ultra-microscope. Some idea of the minuteness of these particles can be gathered from the fact that a cubic millimeter of ordinary colloidal gold is estimated to contain 1,000,000,000 of them, and what would be considered a solution of *fine* particles at least twice that number. These particles or granules are animated by what is known as Brownian movement and are enabled to remain in suspension in a liquid medium almost indefinitely, their stability depending on the size of the granules, the nature of the body and of the vehicle employed. It is interesting to note *en passant* that the number of granules varies according to the cube of their size, so that if their size be re-

duced to one-half their number is multiplied by eight, a fact of considerable practical importance because the activity of these solutions depends upon the multiplication of these centers of activity.

There are two principal ways of producing metallic colloids—viz., chemical and physical (electrical). The *chemical* preparation of a colloid metal is effected by the slow reduction of a salt of the metal, as, for instance, by treating nitrate of silver with a mixture of sulphate of iron and citrate of soda. The *physical* method consists in passing the electric arc between electrodes of the metal to be converted into colloid, plunged into distilled water. Under these conditions the electrodes throw off an extremely fine powder which remains suspended in the liquid. The two methods of production yield widely different results, and from a therapeutical point of view I need only deal with the electric colloid metals, since these only present the necessary homogeneity, minuteness of granules, purity, and stability.

A solution of electric colloid silver (small-grained) is of a brownish-red color (the solution with larger grains has a green tinge). It diffuses light and is vaguely opalescent. For therapeutical purposes it is made stable by modifying the composition of the aqueous medium and is rendered isotonic with blood serum by the addition of sea-salt. Thus prepared for use it is known as electrargol and is one of a series, electraural, electroplatinol, electromercurol, etc., which all appear to possess the same properties in approximately the same degree, a fact which militates in favor of the view that it is the physical state of the substance rather than its nature that determines its effects. These colloid metals, like colloids in general, have a special electric charge, and thanks to their state of fine division they possess a certain catalytic power—that is to say, by their mere presence they can determine very powerful chemical action out of all proportion with the quantity of matter brought to bear. From this point of view the action of colloids resembles that of the ferments.

When colloids are mixed together they form complexes possessing the properties of the bodies originally brought into contact. It is to the affinity of the colloids for each other that we must look for an explanation of the actions of toxins and antitoxins, the phenomena of agglutination, and, indeed, most of the recently elucidated biological phenomena. Since the organism is a complex agglomeration of colloids we have everything to gain by introducing medicinal substances in the colloidal state; indeed, the action of the colloid metals, both locally and constitutionally, testifies to an extraordinary bactericidal, anti-infective energy, both directly and by reinforcing the organic defenses.

Therapeutical Applications.

Although of comparatively recent introduction the therapeutical applications of the colloid metals are numerous and interesting; indeed, their employment inaugurates a fresh chapter in therapeutics which is daily being added to.

Speaking generally, the colloidal metals are especially remarkable for their inhibitive action in infective states—septicemia and pyemia. This action has been shown to be due to their stimulating influence on phagocytosis and to their destructive effects on micro-organisms and their toxins as shown by the immediate fall of temperature and the subsidence of the constitutional symptoms of intoxication. They are employed, as a rule, for the sake of their constitutional effects, for which purpose an injection of from 5 to 20 c.c. is made into muscle or, in urgent cases, into the veins. It is worthy of note, however, that in presence of a local infective lesion, such as epididymitis, bubo, mammary abscess, etc., valuable effects are obtained by making one or more injections into the

affected tissues or as near thereto as circumstances permit, in addition to the constitutional treatment. Similarly, the colloid products can be injected, in accordance with the indications, into the spinal canal (cerebro-spinal meningitis) and the serous cavities (pleurisy, empyema, etc.) or applied locally to the surface of diseased mucous membranes. Their introduction into the circulation is followed in a few hours by a sharp febrile reaction for which we must be prepared, but which soon gives place to a marked and durable fall of temperature associated with remission of the general and local symptoms. If treatment be postponed until the patient is *in extremis* this reaction may be wanting.

The colloidal metals have been extensively employed in acute inflammatory infections of the lungs (pneumonia and broncho-pneumonia) and pleura (pleurisy and empyema). The injection is followed by a marked change in the opsonic index (positive) and the crisis in pneumonia is notably precipitated. It is, indeed, in the treatment of inflammatory affections of the lung and pleura (and in puerperal fever, *vide infra*) that the electric colloids have yielded the most brilliant results, as will be seen on reference to the original papers. In addition to the intravenous or intramuscular injections, electrargol has been introduced into the pleural cavity in presence of pleurisy and empyema, apparently with much benefit.

In puerperal septicemia (puerperal fever) and peritonitis, whether consecutive to labor or as the result of appendicitis, the most remarkable effects follow the intravenous injection of these colloids; indeed, in some instances the patients have been rescued from apparently inevitable death. It is obviously undesirable to postpone intervention until the disease has reached a stage at which the organism has become irresponsive to treatment of any kind. We know that this is the case when the reactional rise of temperature does not take place, and clinical experience shows that patients who fail to react do not as a rule derive benefit from the treatment.

Even more interesting are the results obtained in acute meningitis and in epidemic cerebro-spinal meningitis. In the latter electrargol can be employed either alone or in conjunction with the serum treatment. The injection is usually intravenous, but in severe cases it should be made directly into the spinal canal so as to obtain immediate effects.

Without attempting to exhaust the list of possible applications of the colloid metals, I may mention that within the last two years they have been employed with signal success in the treatment of acute epididymitis. This painful and disabling affection can often be nipped in the bud by a timely injection of one or two c.c. of electrargol *into the epididymis;* even when the disease is fully developed the pain usually subsides within a few hours of the epididymal injection, and the duration of the disease is thenceforth measured by days instead of weeks. Their employment in acute urethritis is being investigated and it is claimed that they abort or avert the principal complications of this redoubtable though common affection.

It will be seen that the action of the metallic colloids is not limited to any particular variety of microbial infection, but extends to most. In typhoid and typhus fever they exert the same antiinfective action, and they have been employed in diseases as far apart as Mediterranean fever and erysipelas, cystitis and tonsillitis.

A glance at the bibliographical notes will show that these remarkable results have not been obtained by any one observer or group of observers, nor in any one country. They are daily being placed on record in medical literature all over the world. In view of their daily increasing field of usefulness it can hardly be doubted that a new and inter-

esting chapter has been opened up in contemporary therapeutics by the introduction of colloid metals.

One point stands out prominently, and that is the absolute innocuousness of these bodies, whether injected into the veins or muscles or into the spinal canal. Injected into muscle they cause very little local reaction or pain, and the dose is determined solely by the requirements of the case, since they are devoid of toxicity. No hesitation need be felt in applying this treatment to children in doses of from 3 to 5 c.c., according to age. It is unnecessary to add that the injections are to be made with the usual antiseptic precautions.

X-RAYS IN HYPERTROPHIED PROSTATE.

Hunter, in the *American Journal of the Medical Sciences,* states that the technique in the treatment af hypertrophied prostate is largely one of individual preference. It is a question of position and dosage. Thus, Robarts treated his cases while seated upon a chair, there being a window in the seat exposing the perineum. The tube was placed below. Gautier irradiated both perineum and lower abdomen. Carabelli and Luraschi placed their patients upon an inclined plane. Tansard and Fleig used a specially constructed diaphragm. Lasseuer and myself prefer a Sims' position. Lasseuer first irradiates the prostate at right angles to the line of its axis; later, directly upon the perineum. My own cases have been treated the latter way. Moszkowicz and Schlagintweit employed a rectal speculum, but this feature of their technique has been greatly condemned.

Many of the operators, says the author, have advised the protection of the testicles by lead foil. They claim that the danger of sterility is thus avoided. In my own series of cases I have found in almost all an abnormal increase in the size of the testicles, most of which, in my opinion, has been due to the congestion resulting from straining. So I have also irradiated the scrotum in all cases save one. I have found great relief and, further, a return to normal size. As what we wish is a reduction of the prostatic symptoms, and a double castration has often accomplished this end, I am of the opinion that the irradiation of the scrotum is a thing eminently to be desired. Of course, we are now speaking of the prostatic hypertrophy of elderly men. We are not discussing these enlargements in younger subjects due to a gonorrheal infection.

The question of dosage is most important. Many operators have prescribed specific amounts. Thus, Tansard and Fleig prescribed 5 Holznecht units during the first series of irradiations, and another 5 Holznecht during the second. All prefer moderately high and well-seasoned tubes. Tansard and Fleig specify a No. 7 on the Benoist radiochronometer. Schlagintweit, a No. 7 on the Wehnelt scale. Personally, my work has all been done with coils, of which I had three, one of 12-inch spark length, and two of 18 inches. I have also used both mercury and Wehnelt interrupters. My present technique follows that used in the treatment of skin affections, save that the tube must be hard and well seasoned. I try to place three or four layers of the primary of the coil in series and use from four to six ampères of current with a Wehnelt interrupter; that is, from one and one-half to two milliampères in the secondary circuit. Exposures of from five to ten minutes are given at frequent intervals and until a moderate dermatitis has resulted. Sometimes I employ the leather filter. There is one thing upon which I do insist. The full physiological dosage must be given. And this varies in different individuals.

Thus we see that the treatment of hypertrophied prostate by the Röntgen rays is closely akin to that used in ex-

opthalmic goitre. It is largely a question of the histological structure of the gland. If the growth is young, and consequently a hyperplasia due to the increase of epithelial and glandular tissue, we may expect brilliant results. On the contrary, if there has been much increase of the muscular or fibrous tissue, it is only by the greater contraction of this tissue that relief can be accomplished. Massage is indicated as an adjuvant in these cases. In the third degree but little benefit may be expected. Aside from the relief to the localized congestion, there will be no improvement in the symptoms. Muscle tissue and old fibrous tissue will not yield to the Röntgen rays.

To conclude: We have in the Röntgen rays a valuable treatment in cases of hypertrophied prostate. As there is no question of mortality, all sufferers may be subjected to its influence. If there is to be an improvement, it will be rapid. If no improvement occurs in a reasonable time, other treatment must be considered.

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X-RAYS IN RENAL TUBERCULOSIS.

Von Lichtenberg and Dietlen, in eleven cases of renal tuberculosis, showed the urinary path by the X-rays and the injection of a collargol solution. In the eight unilateral cases nephrectomy was performed and the X-ray findings controlled by those of the extirpated kidneys. Of the three bilateral cases, in one a nephrotomy was performed. The radiographing of the renal pelvis or pyleography is beset with certain difficulties, although for the most part they can be overcome. The method stands or falls with the passage of the ureteral sound, which is often difficult or may be impossible. There is further difficulty in evacuating the kidney. The pelvis and calyces are filled with pus and caseous debris, as well as the tuberculous cavities which open into the calyces by a very narrow communication. In such cases the ureteral catheter must be left in longer (up to an hour) before the taking of the X-ray. Repeated aspiration aids, and a concentrated collargol should be employed, as it will mix itself with the caseous material and permit a fair shadow. If the collargol solution is introduced before the pelvis is evacuated, the shadow will not be clear. The collargol was usually employed in a 10% solution. The results of its use show that in many cases the diagnosis of renal tuberculosis is corroborated, and in many it is established, by this method. The radiograph produced is a typical one for this disease, and gives a fairly exact outline of the anatomical area affected.

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STANDARDS FOR CHILDREN.

Genius in a boy or girl is an abnormal condition. All children, though, are abnormal, according to medical experts.

A child of two will always be fretful. This is a normal condition.

The average boy and girl are of the same height until the fifth year, when the average boy is taller.

There is only a few inches difference between the circumference of a child's chest and his head between the ages of two and five.

The average male child's head is always larger than the average girl's. A child whose chest measurment is smaller than its head is bound to be weak.

Up to the age of five months a child can not distinguish people.

At four months a child should voluntarily grasp for objects, at seven months it should sit erect, at nine or ten months it should stand erect, and at twelve months should be able to walk.

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MRS. *B*—"That nursegirl is sensible; she won't allow any one to kiss the baby while she's near."

Mr. B.—"No one would want to while she was near."

RADIUM VS. X-RAY.

F. J. Clendennin, in the *Australasian Medical Gazette,* propounds the question for which, he says, the general physician and surgeon look to the specialist and ask, "What shall I employ in this case? X-rays, radium, Finsen light, ionic medication, or the newer application of diathermy?"

"I am afraid," he says, "no hard and fast rule can at present be formulated. Experience alone, which brings an intuition impossible to convey by reasoning, suggests that in this case X-rays or in that some other procedure will give the best result. Naturally the operator will lean to that with which he is most familiar, but I have obtained success with ionic medication and Finsen light when the X-rays and radium have led to no improvement, either in my own or in other hands. A practical point of importance in ionic medication is that, after the electrodes are in position, the current must be applied and reduced gradually, or the patient experiences an unpleasant shock.

"The Finsen light has proved very successful in my hands in a case of long-standing alopecia areata and also in cases of ringworm, but I use the heat rays in combination with the chemical rays. (My views on the relationship between the dermatitis produced by heat and light rays, and that of X-rays dermatitis, have been already laid before Congress, and will be found in the last volume of Transactions.) It is likewise sometimes beneficial to employ more than one method upon the same case.

"In 1907 I was in serious trouble with keratosis on my own hand, the result of X-ray dermatitis. I had had a partial amputation, and desired no further surgery. Having used radium successfully in so-called senile keratosis, which is, in my opinion, nothing but a chronic solar dermatitis, allied to that of X-rays, and which becomes malignant if left alone, I was led to try radium on my own X-ray keratosis, with a most successful result.

"Radium appears to have a great future for the ophthalmologist. Many cases of intractable chronic inflammation can be successfully dealt with by radium, and such conditions as pannus may be benefited.

"In 1903 I published a case of lupus vulgaris in which a girl recovered the sight of an eye by removal of pannus with X-rays. Recently I have treated a boy totally blind from pannus due to trachoma in both eyes, with radium. Five milligrams were applied weekly for ten minutes to the cornea, protected by sterilized rubber tissue. An occasional conjunctival reaction soon quieted under rest and boric lotion. The right eye has cleared with the exception of a small scar, and he can read with it. The left eye has considerably improved. The right eye was under treatment for ten months, and the left for six months. Mackenzie Davidson in particular is enthusiastic about the value of radium in ophthalmic work. In his presidential address in Section of Radiology, B. M. A. annual meeting in 1909, he said: 'I feel sure that radium will take a high place in ophthalmic therapeutics.'

"The public, and a great section of the medical profession are still looking to us with the eager question, 'Is radium a cure for cancer?' When the question is put in that particular way and with that general meaning, it will be better, I think, to answer 'No' without hesitation, but we know that certain varieties of cancerous growth will retrogress and disappear under the influence of radium and of X-rays, and remain, to all appearance, *cured.*

"Sufficient evidence has now accumulated to suggest that if radium could be obtained in sufficient quantities we might be able to influence large and deep-seated malignant growths in the same way that we are now able to deal with

those that are small and superficially situated. I am not now alluding to rodent ulcer, about which there is little difference of opinion, but of that larger manifestation of malignancy which goes under the generic heading of cancer. But, in the absence of such supplies of radium, I think we may lay it down as true at the present time that radium or any other form of electrical treatment can not supplant surgical operation in the treatment of cancer. Then we may ask 'Is their action to be confined only to inoperable or post-operative conditions?' Here, it seems to me, we can put in a claim for respect. Mr. Mansell Moullin, in a recent (May, 1911) address before the Röntgen Society, entitled 'The Treatment of Malignant Growth by Radium,' said, 'On the other hand, it (radium) is of the greatest value in what may be called the pre-malignant stage—that is to say, in removing growths which not infrequently become malignant as age advances, without an operation, and, what is very important, not merely for cosmetic, but for clinical reasons, without leaving a scar.'

"I would go further than Mr. Moullin, for I believe there is an advantage in pre-operative irradiation of a growth, even when it has become malignant. Post-operative irradiation will prevent local recurrences, but it can not affect metastases. I am of opinion however, that post-operative irradiation should be applied in every case where possible, and that pre-operative irradiation appears to lessen tumorous vascularity, and may also possibly tend to prevent subsequent recurrences.

"Finzi (*Lancet,* May, 1911), from an experience of one hundred cases, concludes among other points, that 'prophylactic treatment should be used after every operation for cancer.'

"It may be asked 'What is the advantage of radium over X-rays?' So far as we are on certain ground, radium has the advantage of portability and of facility of application to particular regions. X-rays have the advantage of covering a greater area and are more useful in sloughing areas. Standing on rather uncertain ground, we may also say that radium appears to have a greater selective action than X-rays, remembering always that 'selective action' is a theoretical term."

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BLUE-LIGHT ANESTHESIA.

One of the most remarkable actions of light has recently come to our attention. In an address before the Boston Physio-Therapeutic Society, Dr. E. C. Titus demonstrated that the blue light possessed remarkable anesthetic power. In his experiments he used a series of slender glass rods about one-eighth of an inch in thickness, placed side by side and tied together so as to form a kind of flexible mat which will adapt itself to various parts of the body. The glass must be of cobalt blue and transmit no red rays, this being a very important point. The rods are to be placed upon the area to be anesthetized, and some form of white light, preferable a tungsten lamp, brought as closely as possible without causing discomfort. Strange to relate, in twenty minutes the part becomes insensitive, so that superficial and even deep incisions or punctures are no longer felt. This anesthesia lasts for one-half hour or more, and has occurred so constantly that there is no reason to believe that it is the result of suggestion or accident. Minor surgical operations have been performed under this method and without the least pain or discomfort, and there seems to be enough in it to merit attention.

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HEXAMEKOL.

A combination of guaiacol and hexamethylenetetramine. It is described as a white crystalline powder having the odor of guaiacol. One gram is said to contain 0.65 of guaiacol.

THERAPEUTIC BRIEFS.

Hemorrhoids.—

Epenephrin (1 to 1,000),
Petrolati liquidi, aa., 4 gm. (1 drachm).
Adde.
Adipis lanæ hydrosi,
Petrolati, aa., 12 gm. (3 drachms).
Olei geranii, 0.120 gm. (2 grains).

Sig.: Local use.

Disinfectant.—

Camphoræ, 20 gm. (5 drachms).
Calcii hypochloratis, alcoholis aa., 50 gm. (1½ ounces).
Aquæ, 64 gm. (2 oz.).
Olei eucalypti, olei caryophylli, aa., 1 gm. (15 grains).

Mix carefully in large, cold jar.

Sig.: A few drops on a plate in rooms.

Asthma.—

Ext. stramonii, 0.10 (1½ grains).
Syr. codeinæ, 90 gm. (3 oz.).
Aq. laurocerasi, 30 gm. (1 oz.).

M. Sig.: Three tablespoonfuls daily.

Fetid Bronchitis.—

Alcohol (50%), 20 gm. (5 dr.).
Aq. destill., 90 gm. (3 oz.).
Ac. carbol., 5 gm. (1¼ dr.).
Thymolis, 1 gm. (15 gr.).

M. Sig.: In inhalation.

Pruritus.—

Mentholis, camphora, aa., 10 gm. (2½ drachms).
Spirits camphoræ,
Chloroformi,
Aetcheris, aa., 30 gm. (1 oz.).

Sig.: Spray this on the parts and put on camphor powder.

Flatulence.—

Resorcin, 4 gm. (1 dr.)
Bismuthi subnitratis, 20 gm. (5 dr.).
Aq. destill., 200 gm. (6 oz.).

M. Sig.: Tablespoonful half an hour before meals.

Insomnia Due to Pain.—

Dionini .....0.02—0.03 gram.
Sodii bromidi .....1.0 —2.0 grams.

M. Ft. Pulv. D. tal. d. No. x.

Sig.: One powder at night.

LaGrippe.—

Antipyrine, 0.50 gm. (7½ gr.).
Quininæ sulph., 0.15 gm. (1½ gr.).
Sodii bicarb., 0.30 gm. (3 gr.).

M. for one wafer.

Myalgia.—

Methylis salicylatis .....fl℥iij
Mentholis .....gr. xx
Lin. aconiti et chlorof. (N. F.).....fl℥iij

M. Sig.: Rub in every two or three hours.

Ptyalism.—

Potassii chloratis .....gr. xvi
Tinct. ferri chloridi.....fl.℥ii
Glycerini .....fl.℥i
Aquæ .....fl.℥ii

M. Sig.: Teaspoonful every two hours.

Acidi tannici .....℥i
Syrupi aurantii .....fl.℥i
Glycerini .....fl.℥i
Aquæ .....q. s. ad. fl.℥vi

M. Sig.: Use as a mouth wash five or six times daily.

Pertussis.—

Quininæ hydrochlor., Antipyrinæ..... } aa., 2.5 grams.
Aquæ dest. ..... 75.0 grams.
Syr. ipecac .....ad. 100.0 grams.

Teaspoonful every four hours.

Hemophthisis.—

Calcii chlorinatæ, 4 gm. (1 dr.).
Syrupi opii, 30 gm. (1 oz.).
Aq. destill., 120 gm. (4 oz.).

Sig.: Tablespoonful hourly.

BOOK REVIEWS.

THE TAYLOR POCKET CASE RECORD. By J. J. Taylor, M. D., 252 pages, tough bond paper; red limp leather; $1.00. Published by The Medical Council Co., Forty-second and Chestnut Streets, Philadelphia, Pa.

The object of this book is to encourage more accurate observation and study of cases by supplying a convenient form for a condensed record of each important case, in pocket size, so that the practitioner can have it always with him, and so arranged that the necessary data can be written down in the briefest possible time — preferably while the examination is actually being made. Thoroughness of examination is encouraged by means of a Syllabus, detailing all the points that should be considered in each case. The blank for the first thorough examination, diagnosis and treatment is followed by spaces for sixteen subsequent visits. The book provides for 120 cases.

PRINCIPLES AND PRACTICE OF PHYSICAL DIAGNOSIS. By John C. DaCosta, Jr., M. D., Assistant Professor of Clinical Medicine, Jefferson Medical College, Philadelphia. Second edition, revised. Octavo of 557 pages, with 225 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $3.50 net.

Diagnosis is the stronghold of the American physician and surgeon, especially the practical, clinical phases of diagnoses; hence it is not surprising that American medical literature should be comparatively rich in books on the subject. It is, of course, an exceedingly crucial part of medicine, representing, in fact, the keystone which unites the science to the art, and upon whose soundness rests the whole fabric of applied medical science. Furthermore, it is a subject of a thousand different aspects in which the personal element plays no unimportant rôle, and which probably no two practitioners approach just alike. Therefore, we can not have too much written upon it, provided only it be such writing as tends to enrich and clarify our knowledge and transmute it into intelligent action. Everything has the faults of its virtues, and so, perhaps, the fault of American diagnostique is that it tends a little too much toward the purely practical, clinical side, instead of toward basic principles. But doubtless this accords very well with the average of human nature, which asks for the specific instance rather than for the abstract principle. So we will not cavalierly quarrel with conditions, but unqualifiedly commend Dr. DaCosta's contribution to their demands. The illustrations deserve special mention. They are (*mirabile dictu!*) really original, and constitute considerably more than fifty per cent of the value of the book.

DORLAND'S AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology, and kindred branches; with new and elaborate tables. Sixth revised edition. Edited by W. A. Newman Dorland, M. D. Large octavo of 986 pages, with 323 illustrations, 119 in colors. Containing over 7,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, $4.50 net; thumb indexed, $5.00 net.

Dorland's Medical Dictionary has taken its place among the standard medical dictionaries of the country. It is very complete, covering an exhaustive range of subjects, not merely pertaining directly to medicine but compassing all of the allied and collateral branches of science. If we should be asked to cite

some one special feature in which this dictionary was distinguished from others, we should be disposed to speak of its simple and popular style, which makes it of peculiar value to the general practitioner. Not that accuracy is sacrificed to this feature, but all the definitions simplify and illumine the term defined, which is more than can be said of all dictionaries. The author must have been doing yeoman work in the preparation of this sixth edition, for it contains more than seven thousand terms additional to the previous edition. That is something like keeping up with the procession.

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NERVOUS AND MENTAL DISEASES. By Archibald Church, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M. D., Professor of Psychiatry, Columbia University. Seventh edition, revised. Octavo volume of 932 pages, with 338 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.00 net; half morocco, $6.50 net.

There is not much to be said of this seventh edition which has not already been said of the previous editions. Indeed, we could wish very earnestly that there might be more to say, but that is not altogether the fault of Messrs. Church and Peterson, but is rather due to the disappointingly slow progress made in neurology as compared with other departments of medical science. In every other branch of medicine the tendency of the last fifty years has been to reduce the concepts of disease to the fewest possible number of least common denominators, while at the same time adding materially to our knowledge of their clinical aspects. With neurology, on the other hand, the tendency seems to be to extend our concepts into the greatest number of multiples, and to increase and confuse classification without adding anything material to our real knowledge of the subject. For all the textbooks show the diseases of the nervous system, they still remain disconnected, isolated entities, having neither pathological nor clinical relation to each other or to any underlying concepts. We are not offering this criticism in respect of Messrs. Church and Peterson's book, but of neurology in general. The book under review is as satisfactory, after its kind, as the situation will permit, and the appearance of the seventh edition bears witness to its popularity.

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BLAIR'S POCKET THERAPEUTICS. A Practitioner's Handbook of Medical Treatment. By Thomas S. Blair, M. D., Neurologist to Harrisburg, Pa., Hospital; Author of "A System of Public Hygiene," "Blair's Practitioner's Handbook of Materia Medica," Member of the Harrisburg Academy of Medicine, American Medical Association, etc.; 373 pages, special Bible paper; bound in limp leather; price, $2.00. Published by The Medical Council Co., Forty-second and Chestnut Streets, Philadelphia, Pa.

The physician very frequently needs for instant reference a book which gives the best methods of treatment in any given case. Many books have been offered for this purpose, but they consisted only of collections of miscellaneous prescriptions and formulas, totally unrelated to each other, with no rules or reasons to guide in their use, and almost useless to the physician with any independence of thought or scientific bent of mind. This book gives a condensed intelligent discussion of the best methods of treatment, based on scientific principles, with a well-tried, reliable formula occasionally to ilustrate the application of the principles. The author gives many modes of treatment far in advance of the present text-books. An ingenious method of indicating relative dosage is to print the name of the drug in capital letters for large doses, in ordinary type for medium doses, and in italics for small doses. An exhaustive "Table of Large, Medium and Small Doses" is given in

the book. The diseases treated are divided into related groups, each group occupying a chapter, according to classification, with a copious alphabetical index, provides for instant reference to any particular disease.

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A HANDBOOK OF PRACTICAL TREATMENT. In three volumes. By eighty-two eminent specialists. Edited by John H. Musser, M. D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M. D., Late Assistant Professor of Medicine, University of Pennsylvania. Volume III: Octavo of 1095 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1912. Per volume: Cloth, $6.00 net; half morocco, $7.50 net.

We have—and can have—nothing but the highest praise for this really monumental work. Not monumental, be it understood, in the way of dimension or exhaustiveness, but in respect of its elective and discriminating condensation—a process which, when done so thoroughly and so well as it is done here, implies an immense amount of conscientious work and a still greater exercise of rare judgment. Even so, the volumes are sufficiently large, containing over a thousand pages of octavo size; but compared with the quantity of material that is packed into them, they exemplify a high degree and quality of condensation. They compass the whole ground of practical treatment in the most practical and satisfying fashion. In our judgment, they are one of the most valuable contributions to medical literature made by this country in the last quarter-century. The third volume is conspicuous for its handling of the nervous system, a most difficult subject to elucidate with anything like satisfaction from the standpoint of treatment, but in which the writers have actually managed to set down really helpful and worth-while things in an intelligible, usable fashion. We are giving the series a permanent place on our own reference shelf, and strongly recommend all our readers to do likewise.

OPERATIVE OBSTETRICS, including the Surgery of the Newborn. By Edward P. Davis, M. D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. Octavo volume of 483 pages with 264 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, $5.50 net.

Time was when obstetrics was universally regarded as a department of the internist's work, and we still technically class it as such. But virtually everyone has come to reckon modern obstetrics as a phase of surgery, touching the borderland of both gynecological and pediatric surgery. This applies even to normal labor, in which the approved maxim of guidance is for the obstetrician to "proceed as though every delivery were a surgical operation." But it has a still more significant bearing. It indicates that in the course of obstetric work the practitioner is being led further and further afield into actual surgery, and must hold himself in readiness at every stage of game to become a surgeon at a moment's notice. It is this phase of the subject that is chiefly treated of in Dr. Davis' excellent book. Its title acurately describes its purpose and scope. It deals in a most practical and helpful way with all of the technique and indications of surgical operations connected with the ante- and post-partum care of the pregnant woman and of the child so far as its relation to gestation are concerned. The text is embellished with nearly three hundred illustrations in Saunders' best style, which greatly illumine its didactic teachings.

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NOTES AND MISCELLANY.

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IF there is one particular feature which characterizes the genuine influenzal attack, it is the decided and sometimes intense prostration that remains after the subsidence of the acute symptoms of the disease. This general vital "set back" is oftentimes entirely out of proportion to the severity of the original grippal attack, and the most robust patients are sometimes the most severely prostrated. In addition to the general devitalization, la grippe is extremely likely to be accompanied with or followed by such troublesome complications as otitis, neuritis, sinus inflammation, gastro-intestinal derangements, resistant and obstinate bronchial catarrhs and, more dangerous than all, a peculiar, more or less characteristic, asthenic, form of lobular pneumonia. The skill of the physician and the vital resistance of the patient are often taxed to the utmost in a combined effort to induce final recovery. Anemia, to some degree, is almost always brought about by the combined devitalizing power of the disease and its complications, and convalescence is likely to be tardy and tedious. An easily borne, readily assimilable hematinic does much to hasten recovery and Pepto-Mangan (Gude) is an especially eligible method of introducing the much needed ferric and manganic elements, without producing or increasing digestive difficulty. In no condition does this well-tried hematinic remedy evidence its undoubted reconstructive power more certainly than in the treatment of post-grippal convalescence.

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sweeping one. Truss wearers will no doubt appreciate an invention of such exceeding worth as to merit such notice. By addressing Mr. Stuart at St. Louis, Mo., those interested will probably be furnished with full information.

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Fall presents for the attention of the physician, its typhoid cases, and winter and early spring its regular quota of pneumonic, bronchial, throat and other chest conditions.

At this season, when pneumonia and bronchitis demand the call of the physician, literature presenting the experience of fellow practitioners in the successful handling of these cases would seem most apropos.

The Bloodless Phlebotomist for January reflects the experience of many physicians upon this timely subject.

Dr. Charles Buck, of Cincinnati, presents his experience in handling cases of pneumonia, also relates some facts in the treatment of lumbago, which might also be considered as an affliction prominently manifesting itself at this season.

"Broncho-pneumonia, with supportive, as well as local treatment in all its details, is the subject of the paper of F. A. Kautz, also of Cincinnati.

Dr. E. Clinton Murray, of Houston, Texas, relates his experience and treatment in a case of pneumonia in an eighteen-months-old baby, and Dr. J. C. Klippinger, of Independence, Kan., presents a "Different Technique in Pneumonia," which is decidedly original. In abstract his method is to apply the local dressing in a manner which gives the intercostal muscles a chance to functionate without restriction from bandages. This symposium is closed with a paper from Dr. W. A. Radue, of Union Hill,

N. J., upon "Acute Pleurisy and a Successful Abortive Treatment."

Besides the papers referred to upon the subject of chest and throat diseases much additional information is given. The one in particular we would have you note is the "Rational Influence of Hot Applications," by that well-known therapeutist, Dr. Finley Ellingwood, of Chicago, Ill.

A postal card addressed to *The Bloodless Phlebotomist*, 57 Laight St., New York, will bring you a copy of the January issue.

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HOW TO BECOME A GOOD OPTICIAN.

It is only a few years back that the dispensing of medicines by the doctor was regarded as an unprofessional proceeding.

It is not possible to precisely say what wrought the changed conditions that now obtain, but it is certain that the doctor who elects to undertake that circumspect attention to detail which dispensing demands, for the sake of the extra pay it brings, is taking an awful burden upon himself.

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The Medical Brief

ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG, PUBLISHER T. G. ATKINSON, M. D., EDITOR

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The Medical Brief

A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., April, 1912. No. 4.

EDITORIALS.

THE U. S. P. AND N. F. PROPAGANDA.

THE editor of the *Journal of the American Medical Association* seems to have a well-developed penchant for missing the real issue of every question which he discusses—whenever that real issue runs counter to his own ideas and those of the interests that he serves. There are none so blind as those who will not see; and we suspect that his contracted visual field is of a hysterical rather than of an organic nature. We had occasion, not so very long ago, to call attention to this fault in respect of an arraignment from his editorial pen of the entire medical profession, including many of its leading members, for the use and endorsement of proprietary remedies. We pointed out, at that time, that the very conditions upon which he based his diatribe should, if he had exercised any perspicuity beyond his own nose-tip, have furnished him serious grounds for an indictment and revision of his own position on the subject.

Another instance of the same defect of vision—whether unintentional or wilful, who can tell?—is to be found in his recent editorial upon the U. S. P. and N. F. propaganda. The editor of the *Journal* sorrowfully expresses his disappointment with the movement. He says: "This propaganda movement of the pharmacists (which, by the way, was not a movement of the pharmacists at all, but of the A. M. A., in its efforts to stem the current of the proprietaries) falls short of our ideal in that it merely aims to substitute a ready-made, usually complex and unscientific mixture of known composition for a ready-made, equally complex and unscientific mixture of unknown composition. * * * There is danger, however, that the propaganda may mean only that physicians who previously used certain proprietaries uncritically, will be led to use just as uncritically the official preparations from which these proprietaries were derived."

It is almost incredible that the editor of the *Journal* should not only have failed to perceive that in this latter sentence he has opened up the real issue in the whole question, both of proprietaries and of U. S. P. and N. F. preparations, but should deliberately and ingenuously use it to cover up the real issue. It ought to be broadly apparent to him, upon his own showing, that the real crux of the matter does not lie in the proprietaries or the U. S. P. and N. F. preparations themselves, or in the economics of their exploitation, but in the conditions of the medical profession which call them forth. This is a case of supply and demand. It makes very little difference, as the editor of the *Journal* shrewdly discerns, by what name one calls the preparations which go to supply the demand—whether proprietaries or U. S. P. and N. F. preparations. The constant factor in the situation is the demand. The medical profession demands ready-made remedies, and continues to demand them in spite of all the "educational" campaign of the *Journal* and its

satellites. Over and over again the editor of the *Journal* has this fact borne in upon him, and beats his wings against the air in a plaintive lamentation; but it never seems to occur to him that here should be the beginning of his inquiry, not the end of it—the point for the application of his reform, not the jumping-off place. In this very condition, which he bemoans as the stumbling-block in the way of his reform propaganda, he has opened up a subject which is of further-reaching importance than either the proprietary principle or the U. S. P. and N. F. propaganda —which, indeed, includes them as the whole includes its parts. Yet there is where he always stops short.

If it be true that there is, among the medical profession, an overwhelming tendency to use ready-made remedies, resulting in an urgent demand for such remedies—and that is what the editor of the *Journal* admits, in effect—then it would seem a little beside the mark to abuse and attempt to suppress the quite rational efforts on the part of the pharmaceutical houses and druggists to supply that demand. Indeed, such a campaign is as futile as it is foolish; for as long as the demand prevails it will find satisfaction from some source or other. As the editor of the *Journal* has himself pointed out, the abolishment of the proprietary remedy in any given quarter and degree has but resulted in a corresponding activity in U. S. P. and N. F. preparations, which the physician is using precisely as he formerly used the proprietary.

The proper subject for investigation, and, if necessary, for reform, is the condition existing in the medical profession which gives rise to this demand for ready-made remedies. If it be in itself a legitimate demand, based upon rational and sound considerations, then the American Medical Association, which purports to subserve the interests of the profession at large, should undertake a wide and searching enquiry into the reasons underlying the demand, and lend all its powerful influence to securing the best possible methods of fulfilling it to the best interests of everyone concerned. If, on the other hand, the demand be inherently vicious from the standpoint of scientific medicine and of clinical efficiency, then it should be the part of the American Medical Association to inculcate into the profession a clear conception of its viciousness, and the reasons therefor (a task, by the way, which we have never seen even the resourceful A. M. A. attempt), and thus bring about a natural cessation of the demand for ready-made preparations. Certainly, as long as the demand exists, it is both foolish and gratuitous to split hairs about the relative merits and demerits of proprietaries and N. F. preparations, or in any other fashion to hack at the branches of the matter—a point which the editor of the *Journal* must have seen, but either could not or would not follow to its logical conclusion. The ax should be laid to the root of the tree—at the prevailing demand of the profession for ready-made remedies. But, before the ax is laid, let us be sure that the root is not a wholesome one, which calls rather for culture and fertilization.

MEDICAL DEFENSE.

WE can not agree with the State Insurance Commissioner of Missouri in placing medical defense in the same category with automobile accident indemnity, and laying it under the same taboo. Neither are we altogether in sympathy with those of our contemporaries who rush to the indiscriminate justification of the principle of medical defense. Especially must we decline to participate in many of the foolish arguments advanced by some of the over-zealous

champions of the principle. The philanthropic character of the work done by the physician, for instance, and the general high reputation of medical men as a class, like Gilbert's "flowers that bloom in the spring," have nothing to do with the case. Nor does the fact that ninety per cent of the damage suits brought against medical men are sheer blackmail cut any figure in a consideration of the matter. Doubtless the owners of automobiles could tell the same story. While this journal stands, of course, primarily for the interests of the medical profession, and especially of the general practitioner, yet it has always been its policy to regard also the rights and welfare of the public in relation to things medical, because it believes that the best and truest interests of the profession are broadly based upon these wider relations.

There are, as we believe, sufficient points of difference between a physician's work and the driving of an automobile to render the public-policy aspect of medical defense fundamentally different from that of automobile accident indemnity. Nevertheless there are sufficient points of similarity between them to indicate that the question is not so simple as might at first blush appear. Both protect the insured, for a money consideration, against the consequence of his own act, real or alleged as the case may be; and this, it may be said, is of itself a very questionable function of insurance. The principle of insurance is that the thing insured against shall be in the nature of an unavoidable accident in the course of the insured's daily pursuits, in which may be included the acts of others toward the insured, but hardly those of the insured toward others.

This principle being waived, or stretched (and we freely concede that it has nothing in it of inviolable sacredness), there still remains the deeper and broader principle upon which it is based, namely, that insurance shall not operate to increase or cheapen criminal carelessness on the part of those whose acts are insured against. This is the doctrine of public policy as applied to insurance. It is by this touchstone that the merits of both automobile accident indemnity and medical defense must be tried.

Now there is nothing in the insurance of an individual against the consequences of his own act which, of itself, necessarily violates this principle; just as there is nothing in insurance in general which of necessity promotes carelessness in the insured. But we are bound to consider that insurance of any kind, whether against fire or death or accident or what-not, and even with no direct reference to one's own acts, does tend to make the insured careless. Every insurance company recognizes this, and figures on it in making up its risks. And the more proximate the insurance, the greater this tendency becomes; that is to say, the more immediate the circle through which the insurance moves. So that the investment of the position of insured and insured-against in one and the same individual undoubtedly tends to engender carelessness much more than when they are vested in two different persons; and this is what we are confronted with in medical defense.

The key to the solution of the matter from the public standpoint is found in the statement made in the foregoing paragraph, that the insurance companies recognize this truth and reckon with it in making up their risks. The danger from the combining of insured and insured-against in one individual is at all events considerably reduced if the *insurer* be a third party, absolutely distinct from and unrelated to the insured. If, on the other hand, the insurer be a multiplication, in all essential interests, of the insured and insured-against individual, then the matter is so short-circuited as to be dangerously subversive of public-policy considerations. For this reason, we do not and can not approve of medical defense insurance

by medical societies. Such a plan of defense absolutely puts a premium on carelessness and inefficiency, and reduces the standard of fitness to that of the weakest link in the chain. If medical defense is to be a real benefit to the insured, and at the same time work the minimum of hardship to the public welfare, then it must certainly be carried out through the agency of an independent and thoroughly reliable insurance company, operating under precisely the same safeguards and guarantees that control the operation of fire and life insurance companies. Thus conducted, we can see no valid reason why medical defense insurance can not be compatible with the most exacting demands of public policy

EXAMINATIONS HERE AND IN ENGLAND.

THE communication from the pen of Dr. Hallett, secretary of the Royal Colleges of Physicians and of Surgeons, of London and of England, respectively, appearing in a recent issue of the *Journal of the American Medical Association*, anent the system of examination and graduation of practitioners in that country, ought to stir the State medical boards and organized medicine of the United States, if anything can, to a sense of their shortcomings in this direction, and infuse them with an emulation that should lead to better things. The conditions set forth in that article are so greatly superior to anything that prevails anywhere in this country that we may well sit at our English friends' feet and learn of their methods.

One of the first things that strikes one's observation is the character of the men who serve upon the examination committee of these joint examining bodies. Such names as Lord Lister, William MacCormac, Jonathan Hutchinson, Frederick Taylor, Henry Morris, William Watson Cheyne, etc., in the personnel of a committee actively engaged in the supervision of graduation examinations set a high-water mark which has never been approached in the annals of American State examining boards, even at their best. Men of this class on this side of the Atlantic are "too busy" to serve in such a capacity—just as they are in every department of public service; and so the appointees on the State examining boards, like the incumbents of all our public offices, are all too often the result of politics and "pull." At all events, this difference between the personnel of the examining boards here and in England indicates on the face of it that we do not take the matter as seriously as they do, nor concern ourselves as earnestly in its carrying out.

A second point that can hardly fail to impress itself upon the careful reader of Dr. Hallett's communication is the importance the English examining colleges attach, and the attention they pay, to the elemental subjects of chemistry, physics and biology. Approximately nine months of study and laboratory work in these three subjects alone, either in the medical school or in an institution approved by the committee, and a successfully passed examination in them, are required before any student is permitted to think of studying anatomy or physiology. And these examinations are of the most thorough and determinate character, consisting in each case of both written papers and practical work—in chemistry and physics, laboratory tests, and in biology, oral examination upon biological specimens. All of this, it will be observed, is in addition to the ordinary entrance requirements in elementary subjects which must be fulfilled before the candidate can register with the General Medical Council as an intending medical student—requirements which in themselves exceed most of the American preliminaries.

But undoubtedly the place where the difference between English and American medical examinations shows up most forcibly is in the character of the finals—the examinations which decide the fitness of the candidate to begin the practice of medicine. Here, again, every point that we have mentioned in connection with the personnel of the examining board and the thoroughness of the test is emphasized over and over again. "In all cases the examiners are chosen from the members of the staffs of the hospitals connected with the medical schools of London or of any of the university centers. They need not necessarily be professors of their subjects, but they must be members of the staff of a large hospital, and therefore actively engaged in clinical teaching." *Verb. sap. suff.* How many American examiners in State boards are thus qualified?

Of the examinations themselves we can not say much in detail in this brief editorial. We should inevitably say either too much or too little. The chief and most notable thing about them is their splendid practicality, including the excellent clinical features. Every candidate receives an individual investigation of his fitness, and is made to do actual diagnostic and pathological work under the eye of the examiner—a thing unheard of in American State board examinations. Dr. Hallett, in his article, says: "The Royal Colleges do not profess to turn out an expert in any branch of the profession, but they do aim to assure the public that a man who has obtained his diploma is well qualified to practice." Again he points out: "The examination is not competitive, but a test of fitness to practice."

It may be that the average standard of efficiency among American graduates in medicine is just as high as it is among English graduates. Of that we say nothing. Comparisons are odious. But if it be so, then it is so in spite of, and certainly not because of, the examination conditions which prevail in this country. Our State board examinations and licensing are one of the weakest spots in our whole system of organized and legalized medicine, and need thorough overhauling. We hope that this account which Dr. Hallett has been kind enough to give us of the English system will stimulate our medical educators, and indeed the profession at large, to direct their reform efforts toward this phase of medical education.

Prolapsus Uteri and Cystocele.

(Watkins' Transposition Operation for their Cure.)

By B. L. EASTMAN, M. D.,

Former Professor of Gynecology in the University Medical College, Kansas City, Mo.

PROLAPSUS UTERI has always been more or less of a bête noir to the gynecological surgeon, and its treatment a matter of considerable experiment. While the affection and its relief are not especially urgent matters, yet they involve serious questions of comfort and tolerance of life, particularly in elderly women, to whom an effective operation makes all the difference between happiness and misery. Dr. Eastman makes the most valuable of all contributions to the solution of the problem, namely, the contribution of his own experience, and its net effect is to declare in favor of the Watkins operation—one of its advantages being the elasticity with which it adapts itself to the individual conditions in each case without invalidating its fundamental effectiveness.

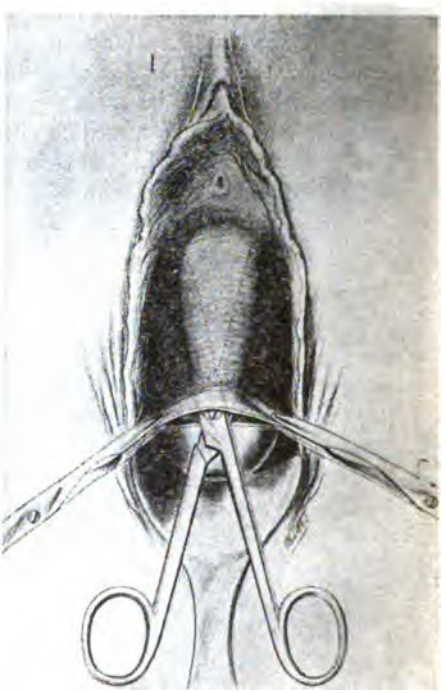
The Surgical History of Prolapsus Uteri, with or without Cystocele, is quite a story, including as it does:

Vaginal Hysterectomy, by Sims, Tait, and Emmett; Ventro-Suspension, by Olshausen and Kelly, originally for retro-displacements, but used by others for decensus; Ventro-Fixation, by Kocher, a classical operation, also first used for retro-displacements; Plastic Vaginal and Perineal Methods, by the Emmett, Tait, and Hegar schools.

After years of trial, most gynecologists are agreed that Vaginal Hysterectomy is too often a failure, especially where the bladder is greatly displaced.

Ventro-Fixation is reasonably sure when it can be aided a little from below. Out of thirty cases in my own work, a part only being for decensus, the fundus has stayed in place in every patient I can trace. Some of these date back ten years, and from that down to a year ago.

One objection to the Kocher fixation is that while it holds the uterus in an ordinary case of displacement, the cystocele itself may not be cured or even improved. The discomforts and dangers of a cystocele *per se* are often more than those of an uncomplicated decensus uteri. For this reason I am limiting the Kocher fixation in my work to the cases in which a laparotomy is the primary indication (tubes, ovaries, appendix, etc.) with the displacement as an incidental issue.



(Watkins.)

FIG. 1. Cervix Cut Across. Tunnelling of Vesico-vaginal Septum.

The Pathology of prolapsus and cystocele goes back in most cases to injury in the second stage of labor. After this

the womb tips back, sinks lower, the anterior vaginal wall elongates, and the bladder sags down between it and the cervix.

Laceration of the vagina and perineum have not, in my opinion, much to do with this descent. As a fact, we generally find a "relaxed pelvic outlet" (Kelly), but it is more incidental than

(Watkins.)

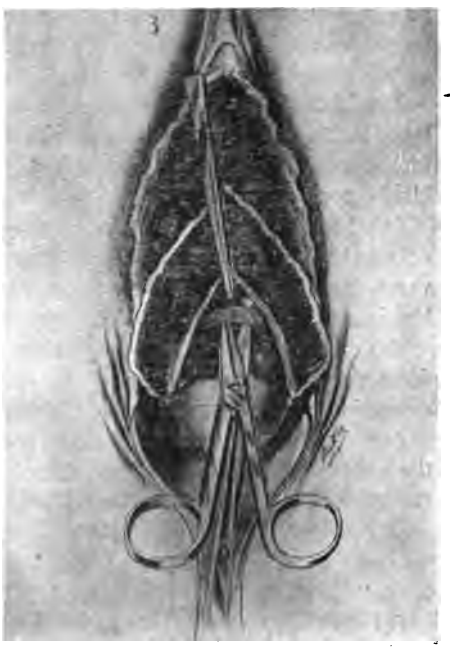
FIG. 2. Lateral Dissection of the Anterior Vaginal Wall.

causal. The continued development means chiefly a further descent in which either the bladder or the uterus may be the lower. With the womb falling into the vagina from above and the bladder pressing into it from in front, the condition has been likened to a hernia.

In spite of all theory and many dissections, we do not know just why these conditions occur in some women and not in all. I am content to accept it as an established condition, interesting myself chiefly in the rationale and technic of its surgical cure.

The Transposition Operation had its origin in the Vaginal Fixation of Duehrssen for retro-flexion. Freund and Wertheim, also Germans, advanced it a little and applied it to prolapsus. One brought the cervix back under a bridge of vaginal tissue, the other let the naked fundus project through the anterior vaginal wall, to heal over by granulation.

Dr. T. J. Watkins, of Chicago, how-



(Watkins.)

FIG. 3. Separation of the Bladder from the Cervix.

ever, from whom I quote very liberally, smoothed out the rough and somewhat bizarre technic of these methods, added considerable, simplified it all, and left it a finished, completed and artistic production. His priority is undoubted and the completeness of his work gives the operation the stamp of his individuality, and it should be known as the "Watkins" operation.

The rationale is simple and involves a change in the relative positions of the bladder and the uterus which is interesting as well as ingenious. Briefly, the uterus and the bladder are loosened from each other and the womb brought

forward into the vagina and secured beneath the bladder. This latter meanwhile being lifted up to ride on its erstwhile rider.

With this transposition established, the fundus is forward, the cervix well backward and the womb has become two-thirds extraperitoneal. The broad ligaments are shortened and tightened by this torsion, and inta-abdominal pressure now crowds the new-made plug only more firmly into the formerly unprotected anterior half of the pelvic roof.

The Technic is a little puzzling to give by words alone, hence the cuts which I filch from Watkins' later article with his kindly permission.

(a) Identification of the lower margin of the bladder with a sound and transverse incision across the cervix just below it.

(b) Separation of the vaginal wall from the base of the bladder and blunt dissection of the flaps of the cystocele.

(c) Separation of the bladder from the cervix by blunt dissection to or into the plica vesico-uterina.

(d) Puncture of the plica (peritoneum) by blunt forceps or scissors and lateral widening with the finger.

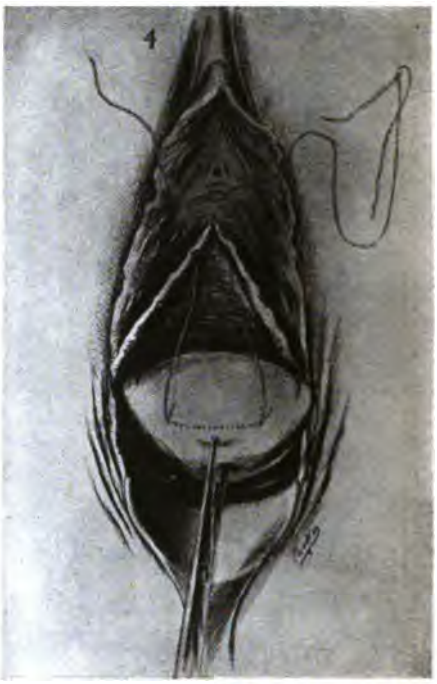
(e) Delivery of the fundus into the vagina by crowding the cervix backward and pulling the fundus forward by successive tenacula "climbing up" the anterior wall of the uterus.

(f) Fixation of the uterus; after mobilization of the tubes and ovaries the fundus is pulled well into the vagina and secured by two or three silkworm gut sutures passed through the upper end of the vaginal wound, each going deeply into the substance of the uterus, behind the dome of the fundus.

(g) Closure of the vaginal wound by heavy continuous chromic catgut sutures, carried down to and including the cross-cut in the front of the cervix.

This description fits the greater number of cases, chiefly women beyond the menopause, but there are three additions to it which may be called for in other cases.

Sterilization is necessary in younger women and is done by resecting the uterine end of each tube with a wedge excision of the tubo-uterine junction. The incision in the uterus is sutured, likewise the top of the broad ligament



(Watkins.)

FIG. 4. Fundus Uteri Brought into the Vagina. Fixation by Silkworm-gut Sutures.

on each side and the outer ligated tubal stump buried in the serosa of the ligament.

Amputation of the cervix is indicated for enlargement, erosion, or deep laceration, and is done just before the fixation of the fundus.

Perineal Repair has been necessary in all my cases so far, most of them being of the "relaxed pelvic outlet" type. For these I use the Hegar incision of the posterior vaginal wall, triangular flap, two tiers of heavy chromic gut sutures.

The results are better than in any other method I have tried in this class of cases. Out of my small series of twelve

no mortality. Of the ten whom I can trace, two are of four years'; three, of three years'; three of two years'; the other two of one year's standing. Age, from twenty-four to sixty-five, mostly over fifty. The youngest I sterilized by the method given. The prolapse varied

(Watkins.)

FIG. 5. The Vaginal Wound Closed by Heavy Chromic Catgut Suture.

in degree from first to third, mostly with large cystoceles.

No prolapse has recurred; in one case there is a slight descent of the bladder, but no trouble or complaint from it.

Watkins, in his last report, gives a total of sixty-eight cases with no deaths, and all but two patients traceable, in good health. Frankenthal, of Chicago, reports an equal number with no deaths and more than 95% functional cures.

The post-operative stage is surprisingly easy and free from serious discomforts. After a run of other operations, with their complaints of pains, "gas pains" and their exasperating constipation, it is a revelation to see these older patients smile and take everything easy from the time of their operation till they walk out of the hospital.

At first I was dubious of some of the older women, but further experience makes me believe that the possible mortality should be reckoned only a little above that of the anesthetic. In these cases a careful gas-ether method that we use makes the anesthesia light and the tissues involved are not over-sensitive. In my last case the anesthetic was carried through so lightly that the patient, after an hour on the table, woke up before the nurse had her completely "fixed" in bed.

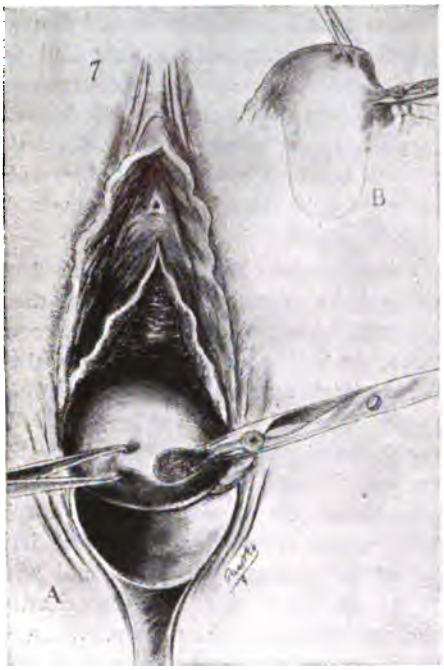
Remarks—So long as women bear children, a certain number of these mothers, by reason of their faulty second stage, or improper care of themselves during and after puerperium, will be partly disabled or semi-invalids. In every community there are numbers of women of middle and advanced age whose lives are of discomfort if not in actual pain, troubled with vesical irritation or incomplete control, and with rectal symptoms due to a coincidental bulging forward of the rectum. When on their feet, never quite free from the dragging pain in the pelvis and a pain in the sacrum and back. And all this in what should be the best and happiest years of their lives.

With one exception, all my patients have come dreading the operation, fearing the mortality, and distrustful of a cure. Most of them have been counselled by older women to "make the best of it." Many have had years of conservative treatment by the family doctor in the best of faith on his part, he perhaps discouraged by a failure from the older methods and disgusted with his task of caring for a patient after her relapse.

But with the Watkins operation the situation should change; it has a wider application and offers a safer and easier and more certain cure for these women than we could have given before. It lets the technic fit the indications as perfectly

as any operation in elective surgery, and here it certainly fits like a foot in a shoe.

To sum up, it is my conviction that the Watkins operation and its favorable results should be known wherever prolapse and cystocele are discussed. It is



(Watkins.)

FIG. 7. Resection of Inner Inch of Fallopian Tube. Wedge Excision of Tubo-Uterine Junction.

up to us doctors to offer these patients a better sentence than continual partial disability under medical or any conservative treatment, and a better prospect for cure than the effort by hysterectomy, abdominal fixation or suspension.

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PLEURISY AND INSURANCE.

Bourgy says that pleurisies, the cause of which can be established, or such as are simply complications occurring in the course of other acute diseases, in a word, non-tuberculous pleurisies, are not contraindications to acceptance for insurance, if the following conditions have been fulfilled: The cure is complete, as corroborated by freedom from signs and symptoms for a sufficient period of time. There has remained no sequelæ of the disease that may embarrass other organs in performing their functions. The same attitude should be adopted in regard to empyema, even though surgical interference has been necessary for effecting a cure. So called essential or primary pleurisy, on the other hand, must be looked upon from a different point of view. It is usually due to tuberculosis, and the applicant giving a history of such pleurisy must be thoroughly examined with regard to any manifestations of tuberculosis. Personal and family antecedents, age, sex, surroundings at home, profession, habits, date of the pleurisy, etc., are the points which must be fully considered. Whenever there is any doubt it is always a good general rule to recommend postponing the acceptance of the applicant for a fairly long period of time.

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DIONIN IN EYE DISEASES.

Selenkowski recommends dionin because of its analgesic effect and its power of getting rid of lymph in perforating wounds of the eyeball, in cataracts extruded into the anterior chamber after incising the lens capsule, in corneal ulcer with hypopyon, in detachment of the retina, iritis, irido-cyclitis and glaucoma. Dutoit reports a case of neuroparalytic keratis, and considers that the only remedies that are likely to prove successful when the cornea has lost its nutrition are such as increase the lymph stream and the circulation. For this reason he used dionin (in 1% and 5% solution) and he made the interesting observation that dionin actually caused a visible formation of numerous new vessels in the cornea, and thus promoted its regeneration. In the case fully described by him, he attributes the good result to dionin and recommends its use in similar cases.

Normal Serums in Infectious Diseases.

By Edgar P. Ward, M. D., Ph. D.,
Professor of Embryology in the American Medical College, St. Louis, Mo.

SERUM THERAPY is yet in its infancy. We are still in the trial and error stage. It is quite likely—nay, practically certain—that we shall have to review many of our concepts and revise many of our conclusions before we finally arrive at a satisfactory and adequate serum therapy. Certainly, the more closely we can imitate and synergise the natural methods of body defense, the nearer we shall get to directness and efficiency; and this must be the point toward which all serum investigation and serum argument must move. But, as stated, such investigation and such argument is, for the present, all tentative, and every contribution is a valuable aid to the illumination of the subject. In this spirit the author offers this little article on normal serums, and in this spirit we publish it for our readers' perusal and thought.

It is the intention of the writer to call attention to the action of normal serums in infectious diseases, but more particularly to diseases that are of a chronic type, *i. e.*, tuberculosis, salpingitis, urethritis. Considering tuberculous infections (and the same theory can be applied to all infectious diseases which cause a slow and constant drain upon vital tissues) they naturally distribute themselves under two headings: first, those of a strictly localized infection unaccompanied by any symptoms of constitutional disturbance, including cases where the infection is limited to a definite area, or one or more lymphatic glands, most cases of lupus, tubercular abscess in the subcutaneous tissues, tubercular affections of the joints, and many slow, progessive cases of tuberculosis belong to this class; second those suffering with general tuberculosis, wherein the constitutional disturbances are well marked.

In the treatment of tuberculosis there are certain elements which must be considered in connection with the protection of the body against the invading microorganisms. The leucocytes, with their digestive ferments, constitute one of these elements; the bactericidal substances in the blood fluid constitutes the other.

The leucocytes must be considered in connection with resistance to bacterial infection, in virtue of the well-known fact that they are capable of ingesting bacteria and of disintegrating them by intracellular digestion. The bactericidal elements modify the bacteria in a manner which renders them a ready prey for the leucocytes.

Protective substances may be defined as substances which enter into destructive chemical combination with bacteria, or, as the case may be, with other foreign elements introduced into the body, either directly into the blood-stream, or by subcutaneous injection. Such protective substances are never absent from the blood. No one recovers from an acute or chronic bacterial disease unless it be by the production of protective substances in the body; no one acquires protection against a disease except, again, by the production of protective substances; and, finally, no one lives in the presence of infection and repels that

infection except by the aid of the protective substances in the blood. The immunization method of treating bacterial diseases is nature's method.

In the treatment of this character of infection with a normal nucleinic serum this general principle must constantly be kept in mind. Such a serum is not a bacterin or bacterial vaccine; not an antitoxin, but a supernormal, bactericidal chemo-serum, obtained from the blood of the goat, with which there has been developed a complex carbohydrate loosely combined with a proteid molecule of the amido-acid type, and which, when injected into the organism, causes an elaboration of protective substances. It is a powerful reconstructive, and, owing to the increased blood pressure which it produces, supplies to the pathological area a greater amount of oxygen. We have, therefore, a very simple solution to the problem, in that the serum supplies to the blood an increased amount of normal bactericidal elements which neutralize the toxins of the germs, and through its reconstructive properties aids nature in building up and fortifying the cells of the tissue against the infecting microorganisms which cultivate themselves in regions where antibacterial substances are absent from the tissue fluids or in diminished quantity as compared with the circulating blood.

It is of the utmost importance that it should come home to you that we are dealing here, not with mere speculation, but with a generalization which rests upon a large body of veritable facts.

I believe that the philosophy of this theory is correct; but the main point is what results are obtainable, what amount of eventual good may the patient be informed they may expect, and what can the physician reasonably expect to accomplish.

In the use of serum of this character I have been more than gratified by the good results that I have obtained in the tuberculous. In looking over my case reports I find many cases that have been greatly benefited—some more than others, as might be expected. The average tubercular patient, when he comes under the charge of a physician, has already run the gauntlet of the advertised and advertising curers of tuberculosis, and is usually suffering with a mixed infection which is so debilitating to the system that heroic measures must be adopted if any aid whatever is to be given these poor creatures. It is just this character of cases in which I have been able to accomplish the best results—these accomplishments do not necessarily mean that the patient has been absolutely cured, but that the patient has been given a new lease of life. It invariably reduces the temperature, lessens or stops altogether the sweats, increases the blood pressure, thus giving the diseased area an increased supply of oxygen and normal antibodies that are in the blood stream to combat the infection with, and thus we have a slow but gradual increased resistance built up, and with increased resistance a gradual improvement throughout the entire body. When a patient suffering with a mixed infection is given a serum treatment of this character and it puts him upon his feet, permitting him to again become a bread-winner instead of a constant care and burden upon those that are closest to him, it is "doing something," and that something is worth while when you are raising a patient from hopeless dependency to personal independency.

A normal serum (and serum seems to be the best medium we now possess) carrying a large amount of normal antibodies seems to me to be the ideal method of treating all diseases of this character. I believe that it offers more hope for improvement and a possible eventual recovery than any method or medicament of which we now have any knowledge.

Measures to Prevent the Spread of Infection from the Bedside of a Typhoid-Fever Patient.

AS WE HAVE frequently pointed out, the general practitioner in the smaller towns and rural districts is required to be, not only physician, but health officer, family adviser, nurse, and in fact, everything that pertains to the administration of health and the care of sickness. In this multiple capacity he has need of all the varied knowledge which pertains to these several offices, and it is the aim of this journal to minister to his needs in this wide range. In pursuance of this purpose, we publish for our readers' benefit this excellent article on the bedside prophylaxis of typhoid fever—a subject in which every general practitioner is interested—from the Public Health Bulletin of the U. S. Treasury Department, for which Dr. Lumsden is responsible.

"The means by which typhoid fever may be prevented from spreading are very simple, very sure, and their cost next to nothing." (William Budd. Typhoid Fever. London, 1873.)

"The case of typhoid fever now in your house was caused by the ignorance or the carelessness of some one; don't let your carelessness cause the illness, and maybe the death, of others." (Health Department of Richmond. Va., 1909.)

Typhoid fever is communicable from the sick to the healthy. The disease is both "infectious" and "contagious." Every person who has typhoid fever has recently swallowed some typhoid germs which have come in some way from some other person. The germs (the infection) of typhoid fever leave the body of a person sick with the disease in the stools and urine. A number of these germs may be contained in a particle of feces or in a droplet of urine too small to be seen by the unaided human eye. Fingers soiled to the slightest extent with the excreta from a typhoid-fever patient and flies which have had access to such excreta may carry typhoid germs directly to human mouths or to beverages and foods which are subsequently to be swallowed by persons. If excreta from typhoid-fever patients are carelessly disposed of, they may be carried by seepage or drainage, on the feet of animals, and in other ways to water supplies and to certain fruits and vegetables. Infection in water may be transmitted to milk, oysters, and other foods.

In these various ways the infection proceeding from the discharges of the typhoid-fever patient may be distributed far and wide.

To prevent the spread of infection from a typhoid-fever patient the following measures should be rigidly carried out:

(1) *Disinfect the stools and urine (and the expectoration if there be any) immediately upon their escape from the body.*—Keep constantly in the bedpan or other vessel used to receive the discharges a small quantity of the disinfectant solution. As soon as the stools or urine are received in the vessel add a quantity (1 to 2 pints) of the disinfectant solution equal in volume to about double that of the excreta to be disinfected. Wipe the soiled parts of the patient first with dry paper and then with paper or a cloth moistened with a solution made by adding 1 part of the disinfectant solution for use in the bedpan to 2 parts of water. If cloths are used they should be either burned or thrown into a vessel containing the full-strength disinfectant solution, and afterwards boiled in the solution. The paper

which has been used for wiping should be submerged in the disinfectant solution in the bedpan. The disinfectant solution and the excreta should be mixed thoroughly, and if there are lumps of fecal matter they should be broken up, because disinfectants can not kill germs unless brought in actual contact with them. Cover the vessel containing the excreta and disinfectant solution and let it stand for about an hour before emptying. The disinfected excreta should be emptied into a water-closet or a sanitary privy, or in a hole in the ground at least 2 feet deep, dug especially for the purpose, protected against invasion by animals, and remote from wells, springs, or other sources of water supply. If deposited in the ground, the excreta should be kept thoroughly covered with earth. After being emptied, the bedpan should be thoroughly rinsed inside and out with the disinfectant. One of the best disinfectants for the stools and urine is chloride of lime solution, made by adding one-half pound of good chloride of lime to 2 gallons of water. A fresh solution should be made up every day, or if a supply for several days is prepared at one time the solution should be kept in a practically air-tight vessel. An ample quantity of the disinfectant solution should be kept in the patient's room, convenient for use at all times. Carbolic acid (1 part to 19 parts of water) and formalin (1 part to 9 parts of water) are thoroughly efficient disinfectants for stools and urine, but are much more expensive than chloride of lime. If carbolic acid or formalin solutions are used, they should be applied in the same quantity and in the same way as described above for the chloride of lime solution. Only disinfectants of thoroughly recognized efficiency should be used. Many of the patented preparations advertised as "disinfectants" or "germicides" have little or no germ-destroying property. If good chemical disinfectants are not immediately available, the stools and urine may be disinfected with boiling water as follows:

Pour into the vessel containing the excreta an ample quantity (a quart to a half gallon, or at least three or four times as much as the volume of stools and urine to be disinfected) of actually boiling (and bubbling) water. After the boiling water is added, cover the vessel and let stand for one-half hour before emptying.

(2) *Disinfect promptly (and certainly before removal from the room) everything which may possibly have become soiled to the slightest extent with either the stools or the urine of the patient.*— Great care should be exercised to prevent so far as practicable the articles in the room from becoming soiled with the slightest (even microscopic) quantities of the patient's excreta. In preparing the room for the care of the patient, all unnecessary hangings, draperies and upholstered furniture should be removed. The room should be clean, well ventilated, and furnished only with articles which may be readily and thoroughly cleansed. Textile carpets and rugs should be removed and replaced, if need be, with linoleum. The room should be freed and kept free from flies and other insects. Dogs, cats, and other domestic pets should be kept out. The mattress of the bed should be protected from soiling by keeping a rubber sheet or folds of paper (newspapers will do) placed over it and under the bed sheet. It is decidedly advantageous to dispense with bedclothes for the patient's body which extend below the abdomen. Bed linen, towels, and other cloths used about the patient should be placed in a tub, washboiler, or other vessel containing sufficient disinfectant solution to cover them thoroughly and boiled in the solution before being washed at home or sent out to be washed. Chloride of lime solution (2 ounces of the powder to the gallon of water) or carbolic acid solution (6 tablespoonfuls of the 95 per cent acid to the

gallon of water) may be used as the disinfectant. Water which has been used for bathing the patient should be disinfected, by adding one-half ounce of chloride of lime to each gallon of water, before being thrown out. Spoons, dishes, glasses, etc., used by the patient should be placed in a disinfectant solution and boiled before being washed for further use. So far as is practicable, articles removed from the sick room, even after immersion in a disinfectant solution, should be kept away from the kitchen and dining room used for the preparation of foods for the well members of the household.

(3) *Have all persons who have been in the patient's room disinfect their hands upon leaving the room.*—A basin of disinfectant solution should be kept at all times on a stand or chair next to the door, so that all persons leaving the room can conveniently soak their hands in the solution before going out. This should be required not only of those who have touched the patient, or the bedding of the patient, but of all who have come into the sick room, because the hands may receive infection from touching anything in the room. The attending physician, especially, should set a good example by thoroughly disinfecting his hands upon leaving the bedside. Those who have handled the patient, the bedding, or the bedpan, and so have been especially likely to get infection on their hands, should, before touching foods for themselves or others and before putting their fingers in their mouths for any purpose, disinfect their hands as follows:

(1) Soak in the disinfectant solution for several minutes.

(2) Scrub with soap and warm water.

(3) Dip again in the disinfectant solution or wash with alcohol (95%).

Any one of the following may be used as a disinfectant solution for the hands:

(1) Chloride of lime, 1 tablespoonful to 1 quart of water.

(2) Carbolic acid (95% pure), 6 tablespoonfuls to 1 gallon of water.

(3) Lysol, 3 tablespoonfuls to 1 gallon of water.

(4) Bichloride of mercury, 15 grains to the quart of water, or 1 part of the bichloride to about 1,000 parts of water.

(4) *Have patient's room thoroughly screened to keep out flies and kill all flies which get into the room.*—All windows and doors should be screened. Mosquito netting will serve for temporary screening. All flies which get into the rooms should be either caught on sticky fly paper or in traps or killed with "swatters." Flies caught or killed should be burned.

(5) *Isolate the patient to a reasonable extent.*—Although one is not liable to get the disease by breathing the air of the room or house occupied by the patient, persons who go in the sick room may touch infected things and afterwards carry infection directly to their own mouths, or through touching foods, by shaking hands, and in other ways carry infection indirectly to the mouths of other persons.

It is better for the patient and for all other persons in the community for all unnecessary visitors to be kept out of the patient's room. As a rule, only those needed in the actual care of the patient should be permitted in the room. If visitors do enter the room, they should be required to exercise, under the supervision of the regular attendants, all due precautions while in and upon leaving the room. It is particularly inadvisable to permit children to go into the sick room.

(6) *Continue precautionary measures as long as the discharges from the person recovering or recovered from typhoid fever are infectious.*—Disinfection of the excreta and of all things liable to have become soiled with the excreta should be continued for at least two weeks after the person affected has recovered from all clinical manifestations

of the disease, and, whenever practicable, until it has been determined by bacteriological examinations that the excreta are no longer infectious. Persons recovered from typhoid fever should be especially careful, for at least two months after recovery, about their toilet and about washing thoroughly their hands immediately after going to stool or to urinate.

(7) *Disinfect the room and all articles in the room upon the termination of the case.*—The room should be fumigated with some gaseous disinfectant, such as formaldehyde or sulphur dioxide. Before fumigation the room should be made as nearly air-tight as possible and surface exposure of all things in the room, such as bureau drawers, bedding, etc., secured as thoroughly as practicable. Formaldehyde may be generated conveniently by mixing formalin and permanganate of potassium in a bucket or tub. They should be used in the proportion of 2 pints of formalin to 1 pound of permanganate. One pint of formalin should be used for each 1,000 cubic feet of space and the gas left in the room for six hours. After fumigation of the room the floors, walls, and woodwork should be scrubbed with a disinfectant solution such as chloride of lime solution (strength 1 to 64) or bichloride of mercury solution (strength 1 to 500) and the room aired thoroughly and sunned as thoroughly as practicable. The bed clothes and other textile materials in the room should be soaked in a disinfectant solution and then boiled. The mattress should be burned, soaked in a disinfectant solution, or disinfected in a steam chamber. If the mattress has not been obviously soiled with the excreta, it may be rendered reasonably safe after having been exposed to the gaseous disinfectant by sponging its cover with a disinfectant solution and then keeping it out of doors thoroughly exposed to the sun and air for about a week.

If the proper precautionary measures can not be thoroughly carried out in the home where there is a typhoid-fever patient, the patient should invariably be taken for treatment to a hospital or some other place where the precautionary measures can and will be carried out.

To follow the instructions given in and under the (above) seven captions is some trouble, but not as much as will be the caring for a second case in the home.

Where such measures are strictly carried out, the spread of infection from the typhoid-fever patient will be prevented; where they are neglected, the fever may become widespread and cause much needless suffering and loss of life.

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INTRAMUSCULAR INJECTION OF BLOOD.

In many gynecological operations, particularly in fibroids of the womb, an operation is imperative, yet the exsanguinated condition of the patients is so marked that every interference is attended with grave dangers. Tonics act too slowly and transfusion is difficult, and not always possible. For these cases, P. Esch recommends the intragluteal injection of defibrinated human blood. The amounts employed were 15 to 30 c.c. and local or general reaction was never seen. In one case the hemoglobin rose from 25% to 36% in 13 days and in another from 23% to 39% in 12 days. Good results were also seen in pernicious anemia, and it may be an advantage to give larger doses here. In many cases bleeding was checked soon after injection.

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NEVUS.

Sodii ethlyatis Merck..... 10 grains.
Alcoholis absoluti ..... 2 fl. ounces.

M. Sig.: Apply with a glass rod, and cover with collodion.

Chromii trioxidi .....100 grains.
Aquæ ..... 1 fl. ounce.

Sig.: Apply locally.—*Merck's Manual.*

The Deeper Meaning of Disease and Suffering.

AXEL EMIL GIBSON, M. D., Beaumont, Cal.

AS A RULE, the MEDICAL BRIEF aims always and everywhere to be eminently practical. All of its original articles, abstracts, and department matter, are carefully selected with a view of rendering actual help to the practitioner in his every-day work. Once in a while, however, it is not a bad idea to pause in our work and remember that the earth moves around the sun—in other words, to take a bird's-eye view of medicine from its broader philosophical angle. It is such a view that Dr. Gibson takes in the article which we here present. After all, the doctor is a man, and nothing that concerns humanity can be indifferent to him. Hence, even in this aspect of pain and suffering, the physician will undoubtedly find something to aid him in his dealings with suffering humanity.

There are two angles from which disease and suffering can be observed and appreciated, either as a saving effort of nature to restore order, health and harmony to existence, or as a meaningless, accidental assault of a brutal law-and-order defying destiny—a phantom of evil which at once is and is not. The first has its reason and support in Christian philosophy as taught by Jesus, the other in the theory and practice of Christian Science as formulated by its founders.

The whole scheme of salvation, headed and initiated by Christ, and propagated by the long procession of Christian martyrs, has its root, power and unfoldment in the very possibility of pain and suffering. Suffering is an ever-present accompaniment to birth-giving, whether it be the birth of the soul or of the body; of an idea, a plant, an animal, or a human being. "If there were no suffering," says Von Hartman, "there would be no religion." It is the unavoidable consequence and concomitant in the process of giving and receiving; of the old giving place to the new. It is the truth back of the parable of the new wine—the transcendent life—in the old battle—the impaired or used-up body. Suffering is the pruning of the orchard of the heart, the weeding out of the weeds of selfishness from our nature, or, in the words of St. Paul. "Suffering is a teacher unto Christ."

Evolution is staged and dramatized under the promptings of either interior or exterior coercion. The one prompts by promise, the other fear; the one appeals to our personal ambition, moral, spiritual, ideal, the other by the lash of pain and suffering. The one is led by intuition, the other is driven by intellectual affirmation. In the order of evolution the latter condition, when understood and appreciated, not ignored or denied, will give way to the former; the scourge of the flesh will be supplanted by the wings of the soul.

For what purpose is the nervous system but to serve as a register for the changes generated and unfolded in outer and inner nature in the course of our evolution? No unfoldment is possible without nervous action, and the latter is equivalent to either joy or pain, according to our power of response to the incoming or outgoing force currents. "We learn in suffering what we teach in song" and "Our sweetest songs are born from saddest thoughts" are sentiments handed down to us from the noblest and sweetest of our poets. It is not suffering that benumbs or paralyzes, but the attitude we take to it. Ignore suffering

by denying its mission, and its lesson is lost. The "stepping stones of man's dead selves," if viewed from a Christian Science point of view, in place of "leading to higher things," will lead down toward regions of ignorance, superstition and brutal egotism.

And as suffering has been the keynote and unremitting condition to every high attainment, so resignation and loyalty to the law of life, and to the will of God, has been the cleansing and regenerating fire out of which the purified soul, like the Phoenix of old, triumphantly has been rising from the ashes of its lower nature. Homer, Michel Angelo and Milton were blind; Carlyle, dyspeptic; Pope, a hunchbacked lifelong invalid; Darwin, a sufferer from chronic "mal de mer;" Herbert Spencer, a chronic neurasthenic, etc., yet they all rose superior to their suffering, and singlehanded each one left a bequest of knowledge and culture to humanity, which will be remembered and enjoyed long after the tidal wave of Christian Science spent its last momentum in unreasoning, negative and non-constructive affirmations.

Suffering in the Light of Christian Ethics.

The Christian Science movement stands for one of the greatest paradoxes in history. Notwithstanding its denial of matter, the entire force of its practice is brought to bear on the preservation and adoration of man's mortal coil. While the heroes of true Christianity used the body as an instrument in the service of the soul, the Christian Science employs every energy to coerce the latter by psychic jugglings into a menial service of the body for the sake of "health, wealth and success." Thus the tables are entirely turned. In place of the body being the servant of the soul, the latter is degraded into a taskmaster for the gratification and adjustment of the desires and appetites of the body.

This attitude shows at once a lack of faith in the soul, and a lack of knowledge of the body, as the latter, like that of an animal, by its very nature and constitution is equipped with power to maintain its functional equilibrium. Consequently, if disease arises it can only be due to the fact that the physiological balance has been broken, which again means that only a re-establishment of this balance can permanently restore the deranged functionings. If a spring is strained beyond its center of poise, its mere release from the restrictive influence will bring about a return to its natural position. So with the body, its release from limitations and obstructions; its rest from physical and mental strain; the removal of impediments in the discharge of its functions, be it along the line of diet, overwork or worry, will restore the balance of its disturbed health relations.

If a dog, by overfeeding, gets its eliminative system clogged up, he takes recourse to the purgative properties found in a certain species of grass, while at the same time giving his system over to the benefit of a longer or shorter rest from food with its digestive labors. A couple of days of voluntary fast will suffice to restore the animal to its natural health and strength.

In the majority of cases the same benefits would come to man. The physical body, be it of a dog or a man, is adequate to take care of itself, and if man submitted himself to the same practice of self-restraint and control as the dog, he would enjoy the same success of cure. Back to nature and to God! Back to the simple faith in life's eternal justice and regenerative power. If by indulgence of our senses we contract disease and suffering, it is only by restoring to nature her dues—in the redemption through self-restraint of our transgressions—that we can restore our peace with God and harmony with nature. And health means harmony with nature on all planes of existence.

It is amazing how little respect and homage we pay to the sacred powers in

which life has its source and destiny. While in national difficulties it would never occur to us to call on the minister of war or the president of the nation to patch up a damaged uniform of a soldier, the Christian Science practitioner does not hesitate to invoke the assistance of our immortal soul to repair bodily discrepancy, mostly brought about by ignoring hygienic and physiological laws. The remedy, however, lies in the very nature we outraged, in permitting our outraged functions a rest for the sake of repair and adjustment. Loyalty and obedience to the laws of life, with motives of usefulness and service, is the method of cure which God extends to man.

A calm and dignified consideration of life and its wider meaning will not fail to reveal the value of suffering and the uses of adversity.

"Sweet are the uses of adversity,
Which, like a toad, ugly and venomous,
Yet wears the golden jewel in its head."

"While recovering, I experienced two opposite feelings," writes Tolstoy to his friend, Alexis Bakonine, "The joy of a reviving animal, and regret for the loss, the dulling of that spiritual consciousness, which was present in time of sickness. I know truly that every illness I have had has been a great blessing. It has given me what my own reason and the opinion of others could not give me; it opened to me a larger field of life. The illness and suffering of men are wrought with the deepest meaning; they are not from their own will. God has paid a visit."

For, after all, the real aim and meaning of life is not conventional comfort and bodily ease and happiness. The latter are the mere means and conditions by which the soul works out its redemption, through usefulness of effort, unselfishness of motive and faithfulness of service. "Not what I have," said Thomas Carlyle, "but what I *do*, is my kingdom."

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MAKING RE-EXAMINATIONS.

The *Optical Journal and Review* thinks that when it is thought necessary to make a re-examination, it is not always necessary to make a complete one. This is especially true when there has elapsed but a short time since the previous examination. For instance, the case may be one requiring a sphero-cylinder in which the examiner is quite sure that the cylinder is the correct one, in which case only a retest for the spherical error is called for. The experience in most cases where examinations are made two or more times is that the refraction does not change; once found, always found, barring the oncoming of disease. Yet, there may be exceptions to the rule, and cases are from time to time reported where there is not only a change in power of the sphere required for a full correction, but also of the cylinder, or of both power and axis; this independent of the development of latent hyperopia, and of presbyopia. In such cases, as soon as suspected or recognized, the re-examination should be a complete one. Sometimes a quick retest can be made by having the patient wear his glasses during the test. This applies especially where a dynamic test is made to see whether the glasses worn for distance are also correct for near work.

In all examinations the best visual acuity attainable with glasses should be recorded so that on a return the falling of the visual acuity, if this exists, may be quickly recognized; and, in fact, a comparison of conditions and results at one examination with those of another examination may disclose a state of affairs which show that the eyes under test are no longer healthy eyes, in which case the optometrist should give a proper warning as to the possibilities.

Medico-Legal Relationships of General Paralysis of the Insane.*

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(From *The Lancet.*)

THE sociological aspects of medicine are growing in importance with the spirit of the times. No physician, wherever he may be located and whatever the nature of his practice, whether general or specialized, but meets these medico-sociological questions, and is obliged to contribute his share toward their solution. And in no department of medicine, perhaps, do such problems present such urgency and significance as in that which pertains to neuro-mental conditions. The author of this article, a recognized authority on the subject, deals in an illumining manner with the question of general paresis as a social disease; and we commend his analysis of the matter to the earnest attention of our readers.

There is no doubt of the utility of bringing groups of conditions together and looking at them from a special standpoint, and I have selected the medico-legal relationships of general paralysis of the insane.

Introductory Remarks.

General paralysis of the insane is one of the most interesting forms of brain disease associated with mental disorder. The disease is more or less definite in its course and in its fatal terminations, and it is pretty certain that syphilis is one of its most certain causes. Taking these facts into consideration, it is probably only a question of time before we discover some treatment which will arrest, if it does not cure it. If it is to be cured it must be detected early, and the medico-legal aspect brings one into relationship with many of the earlier cases, and therefore is specially interesting.

General paralysis does not need here either a definition or a description, but I shall have to refer to several forms of the disorder, to different social dangers which may arise in these different forms or at different stages of the disease. First, there is the warning or prodomal stage, next there is the more acute stage, then the placid one which passes into the demented one. At each period there are particular dangers.

The greatest danger arises during the earlier stages, though in the weak-minded one there is risk of the patient becoming, through his facility, the tool of others. In the warning stage the chief characteristic is some loss of higher control so that the actions follow feeling rather than reason. They are often impulsive.

The result of defective control varies with the individual, and may either be represented by anger, violent language, and even brutal acts, by improper companionships and sexual faults of various kinds, or by marked acquisitiveness—the senseless taking of things for which there is no real want.

Brutal Assaults.

First, then, a certain number of brutal assaults are made in the earlier stages of general paralysis of the insane. When we recognize the degrading tendency of the disease, with its inclination to seek for companions those belonging to a

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lower social order, it will be seen how the conditions leading to disorder of conduct are provided. Bad companions and drink, to which the general paralytic easily succumbs, may lead to violent personal attacks; and it is important to remember this, especially those of you who have anything to do with police cases, for I have known men who were general paralytics taken up for disorder of conduct, and when in the cells have been seen by medical men who have diagnosed drink from the alteration in speech, which was really due to the disease, not to drink. In these cases there is no premeditation, and the attacks as a rule are impulsive and are not followed up. There is often regret at the actions and a wish to make amends.

Sexual Relations and Offenses.

General paralysis has always been looked upon as a disease in which the sexual functions play an important part. Formerly, sexual excess was considered the chief contributing cause, and now one recognizes as an early symptom great development of desire, often with a lack of power. In early general paralysis lust is almost always present, and may lead to what appears as a normal affection with offers of marriage. I regret to say I have seen such cases of marriage in haste and regret, on the wife's part, at leisure. The lust may be very great, and the insatiable longing which is very trying to the wife, or there may be, as in some cases with tabetic symptoms, desire which passes off very rapidly, leaving the man impotent. I have never had a case in which a plea for nullity of marriage under these conditions has been raised, but in several cases I should like it to have been brought to the test of the law courts.

Next, adultery is common among these patients, and in some cases I believe divorce has been obtained from a husband's suffering from general paralysis whose disease was the cause of immorality. The courts have so far never looked upon the plea of insanity as a very justifiable one in divorce cases. The general feeling seems to be that adultery is the one thing to be considered, and the contributing cause, insanity, is to be left out. The loss of higher control leads not only to adultery, but to the marriage of general paralytics with persons of immoral character. I have known several general paralytics who have married their mistresses or have married women of notoriously bad character. Besides this, general paralytics with general exaltation take if for granted that any woman will accept them. They, feeling so endowed with riches and honor, only have to seek to get, and under these conditions indecent suggestions or assaults may arise, the man believing that the woman was willing or even encouraging him. More common still in my experience has been indecent exposures. I think in some cases that general paralysis is a good plea for cases of indecent exposure. Indecent assaults on children are made by some men who have lost their higher control. In these cases there is, as a rule, a silly childishness about the acts; they are not brutally violent, but they are often done openly and without attempt at denial or evasion. In epilepsy there may also be fierce eroticism, but the acts are brutally carried out and there is honest denial due to complete loss of consciousness of the acts. The indecent cases of the general paralytic resemble in many ways those which not infrequently are seen in police reports in reference to old men, but in these last there is generally denial, but not of the honest type of the epileptic. It is evasive and easily controverted. In a few cases I have met with sexual perversion and unnatural offenses in general paralytics. The patient is generally rather the victim or passive agent, being facile in immorality as in other things. To sum up on this matter, in any case of indecent exposure or assault perpetrated by a middle-aged man be on the look-out for the physical signs of general paralysis.

Acquisitiveness.

As in so many other respects the general paralytic reverts of a simple uncontrolled nature, so it is in the relation to property. The child takes what happens to be near him and what at the moment attracts his attention or something which appeals to his simpler desires or appetites. I remember several men who were admitted to Bethlem Hospital after they had been brought before the magistrates for petty thefts. Books from open bookstalls and sheets of music from similar places were the attractions. The attraction of jewelry was great also. The absolute value of things does not appeal so much to the patient as does his value of them. I have known a man take perfectly useless and valueless things for which at the moment he thought he had a distinct use, something which he felt was essential for some great scheme which he was starting. These petty thefts are most common in the earlier stage of the disease; later on the thefts may depend on quite another symptom of the disorder. How can you consider a man to be a thief if he feels that the whole world belongs to him, or that he is so rich that he can repay anyone for anything which he takes? It is thus I have known a man take valuable rings to give to the lady of his love. I have known general paralytics write checks for large sums on banks at which they had no account. They would not forget a signature, but, fully believing they had money at the bank, would sign checks. Very serious complications have arisen as the result of patients in the excited stage entering into big speculations, buying recklessly stocks and shares, ordering houses and furniture; as may be imagined, but yet hardly to be expected, I have known a man make a fortune in the earlier stage of this disease. At the time there was a boom—I think it was in nitrates; but any way he bought as freely as he could, and by the time he was in the asylum his speculations had proven a success.

Criminal Acts.

The criminal acts of general paralytics, as a rule. are not marked by any definite plan, uncontrolled impulse being the general cause, but though not common, yet occasionally general paralytics suffer from hallucinations and may have many of the symptoms of delusional insanity with ideas of persecution, and in such cases patients may be goaded to acts of violence.

Criminal Lunatics Suffering from General Paralysis.

I have obtained some reports from the English and Irish criminal lunatic asylums which are of interest, and I will give only the general results. I was surprised to see how rare it is to find criminal lunatics suffering from general paralysis. Dr. G. T. Revington, of Dundrum, tells me that in 20 years he has had only 8 cases of the disease, and Dr. John Baker, of Broadmoor, says that in the 50 years since the opening of the asylum only 58 general paralytics have been admitted. In Dundrum 2 were accused of murder, 2 with sexual crime, the rest with crimes against property. Of the Broadmoor patients, 16 were convicted of murder or serious assaults, 5 were guilty of sexual faults, and 36 of offenses against property, including arson, burglary, and the like. As I have already said, it is interesting to find so few criminal lunatics general paralytics. In part this is explained by some of those who have committed thefts being sent to ordinary asylums and never being sent to the State asylum.

Injury and General Paralysis.

Recently a very important practical point has arisen in relationship to the part that injury may play in the production of general paralysis. In questions of compensation for injuries leading to death and also in cases of life insurance it may be contended that injury alone would not have caused the disease. You will recognize that now the great majority of authorities look upon general

paralysis and locomotor ataxia as almost certainly associated with, if not fully resulting from, syphilis. Yet I find even such an authority as Dr. F. W. Mott hesitating when asked if it is impossible for general paralysis to arise from accident alone. He, I think, agrees with my experience, which is, that in a very large majority of cases of general paralysis syphilis of long standing can be established, but that this disease alone is not the only factor. The question of heredity comes in, and the illuminating work of Mott inclines one to think that just as with alcoholic poisoning certain persons suffer in their brains while others do so in their general viscera, so with syphilis in some of the stress of the disease falls upon the nerve centers, while in others it selects other parts, such as the skin or bones.

To return to the main point, though syphilis is most commonly associated with general paralysis, yet it requires other elements to start the disease. I believe that meat diet and alcohol are factors in many cases, and, incidentally, I may say that one superintendent of a large asylum told me that with general paralytics he hardly ever gave a meat diet, and as a result the acute phases and the epileptiform seizures had vanished from the asylum.

I have, as most of you must by now know, been in the habit of saying that syphilis seemed to ripen the brain for decay, and that any accident from within or from without might lead to the rottenness or decay. It therefore comes to this: A man, who many years before had syphilis, was properly treated, and has been a healthy man, receives a blow on his head, which renders him insensible. He may recover from this, but within a few months some alteration is noticed in his conduct. If in one of the services, he gets into trouble by faults of irregularity or unpunctuality. He is irritable and forgetful; slowly the other signs of general paralysis appear and he is invalided. A claim is now made for disability depending on accident. Without the previous syphilis he would not have developed general paralysis, but without the accident he might never have developed it, or, at any rate, not for years. In my opinion, the man ought to be treated as if the accident were the efficient cause of disablement. In the same way in cases in which it is a question of life insurance, I presume a man who has had syphilis would have some addition made to his premium, but if he is following a life which is more than usually associated with risk of even slight accidents, such as being in the army or navy, I think a good deal ought to be added. I do not know of cases which have actually arisen in relationship to these points, but I know that they have arisen in cases in which pension questions had to be considered.

Testamentary Capacity: Improbability of a General Paralytic Making a Sound Will.

And now I come to a part of my subject—the testamentary capacity of a general paralytic—which has been of great interest to me, as I have on several occasions had to be cross-examined as to my experience and to my opinion.

At first I fancy many of you would be inclined to say, "Of course, when once established that a man is a general paralytic then his capacity is gone." But you must remember that the law courts have supported wills which have been made in asylums even by patients at the time under the Court of Chancery. So that being of unsound mind does not necessarily prevent the making of a valid will. For testamentary capacity, as I have frequently said, there must be sufficient memory to recognize the property concerned and its relationships, also normal memory of blood relations, freedom from delusions affecting either the property or the relations, and sufficient will power to prevent undue influence.

The dangers in general paralysis are first on the emotional and unstable side, so that the so-called facility comes in, the last impression being followed. The patient will promise the last person whom he met all he possesses and more for no real consideration. The amorous tendency, too, easily leads to the giving largely to unworthy persons. The reckless extravagance depending on delusions of grandeur are very potent influences. The defective memory must also be considered. Here, then, we have commonly a person with defective memory, want of normal recognition of his relations and of his property, and therefore likely to go wrong. He is also very easily influenced. On the first aspect, then, of such cases one is justified in saying it is improbable that a general paralytic will make a good will, but even with all these symptoms he may almost automatically carry out in his will the feelings and judgments of his sane life. Therefore in each case the contents of the will will be found to influence a jury more than your opinion.

Wills and Lucid Intervals.

Next, it is of great importance to remember that there are in general paralysis frequently periods of complete sanity. I know many, who have not lifelong experience of the insane, are inclined to doubt the restoration of sanity of anyone who has been out of his mind, but I know better, and in general paralysis I have seen, even in cases which ended fatally within a short time, perfect lucidity. I remember very well a case which was heard in London some years since in which a man who died of general paralysis made a will some time after he had been in an asylum. He was sent out of the asylum "relieved," and during a period of calm made a will which, though contested, was established. It is very important to remember that it is not in every case that these lucid intervals occur. As a rule the more acute and maniacal the onset the greater the probability of a remission. Though rare, more than one remission may occur, but as a rule I should doubt the capacity of a patient who had had more than one lucid interval. Again, these lucid intervals occur during the earlier stages of the disease, and though disinclined ever to be very dogmatic in reference to prognosis in cases of insanity, yet my opinion is that remissions are not to be expected in the second or placid stage of general paralysis, and are impossible in the last or demented stage. This, I think, is a very strong and important point, but one not easily established before a jury. Take such a case as this: I was asked to see a man whom I had once seen before I had diagnosed general paralysis. I found him lying on a mattress on the floor, muttering incoherently. It was impossible to get him to understand a word I said, and I failed to understand anything he said. I heard that he had been in this restless, dirty, and demented stage for some days. I heard that he survived a few weeks and then died. Some time later I was asked to give evidence as to his testamentary capacity at the time of my second visit. I said without hesitation that he was totally incapable of understanding the contents of a will or of duly executing it. Yet his cross was affixed to a document purporting to be his will. I was examined as to the nature of general paralysis, and I was asked if it was not true that in this disease there were lucid intervals. I admitted there were, but only at earlier stages. I was asked if I had not assisted in establishing the will of a general paralytic. I admitted this. When trying to explain the difference between the cases I was stopped, and the counsel made it appear that in cases—that is, all or any cases—of general paralysis there might be lucid intervals, and it was not for a medical expert to say when and how these might occur; the fact was that such intervals did occur, and he maintained that the deceased had during such

a period signed the will. The jury agreed with him.

In relationship, then, to testamentary capacity, the ordinary qualifications for capacity must be established, but it must be allowed that there may be periods of complete lucidity during which a proper will may be made. Here I may say that in criminal cases it may be set up by the prosecution that the crime, though perpetrated by a general paralytic, was still done during a period of sanity.

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ASCENDING KIDNEY INFECTION.

Sugimura, in *Virchow's Archives,* reports an attempt to demonstrate the method by which acute non-specific bladder inflammations reach the kidney. For this purpose he examined twenty-one cases, removing at autopsy the kidneys. ureters, and bladder together, and taking in each case microscopic sections from the pelvis of the kidneys, various portions of the ureters, and the bladder wall. In four of these cases the organs were apparently healthy, in twelve an acute bladder inflammation was present, but the pelves of the kidneys were macroscopically free, in five a severe inflammation of the upper urinary tract was present, associated with a more or less chronic cystitis. In the cases of apparently normal organs no inflammation of importance was found in the ureters. In those of acute cystitis the muscularis, adventitia and submucosa of the ureters almost without exception showed, at least in the lower portion, many small foci of inflammatory infilteration which were in direct connection with those of the bladder wall. The mucosa itself was found, on the other hand, to be practically free from all signs of inflammation, such as might have been expected to be present if the infection had traveled through the lumen of the ureter. Sugimura believes, therefore, that an acute infection of the bladder ascends chiefly through the lymph vessels of the ureters, since a direct connection between the lymph vessels of the bladder wall and of the lower portion of the ureter on the one hand, and between the kidney and the ureter on the other, has been demonstrated, so that the kidney and bladder are really in communication with each other through the lymphatic vessels of the ureters. He believes further that the inflammation ascends more or less in direct proportion to the anatomical changes in the bladder wall, to the duration of the disease, and to the virulence of the causative agent. In the cases of chronic, non-specific descending inflammation with or without stagnation of urine, the important part played by the lymph vessels could also be demonstrated, although here the mucosa appeared to be somewhat more involved than in the cases of ascending infection.

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RECOGNITION IN HEAVEN.

"Patrick, the Widow Maloney tells me that you stole one of her finest pigs. Is it correct?"

"Yis, your riverence."

"What have you done with it?"

"Killed it and ate it, your riverence."

"Oh, Patrick, Patrick! When you are brought face to face with the widow and the pig on the great judgment day what account will you be able to make for yourself when the widow accuses you of stealing?"

"Did you say the pig would be there, your riverence?"

"To be sure, I did."

"Well, then, your riverence, I'd say, 'Mrs. Maloney, there's your pig.'"

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GRIP.

Meara recommends the following in grip:

Acetanilidi	1.5 gram.
Sodii bicarbonatis	1.0 gram.
Caffeinæ citratæ	0.5 gram.

M. et divide in caps. No. 15.

CURRENT MEDICAL LITERATURE.

REMOVABLE BLADDER SUTURES.

COLIN CLARKE, in *The Lancet*, describes the following method of closing the bladder, with removable tube sutures, after suprapubic cystotomy:

A private in the 2d Devonshire Regiment was admitted into the Military Hospital, Cottourra, Malta, in July, 1911, suffering from stone in the bladder. Owing to the cystitis present it was decided to remove the stone by suprapubic cystotomy. Under general anesthesia the bladder was opened above the pubes and a large, nodular, oxalate stone was removed. The bladder was well washed out with boric acid lotion and a No. 8 rubber catheter was secured in the urethra. The incision in the bladder wall, about 2½ inches long, was closed by means of seven tube sutures.

The tube sutures consist of the following parts: (1) Strands of ordinary strong silkworm gut; (2) short pieces of glass-tubing, 2 inches long and ¼ inch in diameter; and (3) small brass or steel rings, ½ to 1 inch across. The sutures of silkworm gut are passed with a curved needle through the muscular coat of the bladder on both sides of the opening. Each suture is inserted not less than ¼ inch from the edge of the incision and emerges on the cut surface, just short of the mucous membrane of the bladder, as in Fig. 1. The two free ends of the suture are threaded through a glass tube and drawn tight; they are then secured in this position by being firmly tied over the rim of one of the metal rings, as in Fig. 2. The loop of silkworm gut which projects from the end of the tube and passes through the bladder wall acts like the loop of a wire polypus snare and holds the two sides of the bladder incision firmly in contact with each other. The other end of the silkworm-gut suture, knotted over the edge of a ring, as in Fig. 2, is on a level with the surface of the abdomen and is easily accessible for the removal of the suture. To remove a suture the silkworm gut is divided close to the knot, and the knotted end is then pulled on until the suture is withdrawn. One hand at the same time holds the glass tube steady in

FIG. 1.

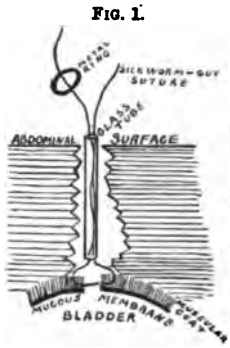
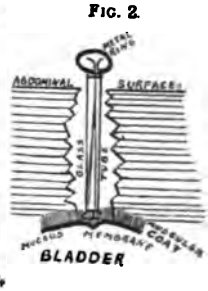


FIG. 2.



the wound. The silkworm gut remains quite taut after ligature in the tubes, and does not adhere to the bladder wall on removal.

In the case mentioned above seven sutures were inserted to close the bladder opening and five glass tubes were used to hold them. The two lowest tubes carried two sutures in each. The catheter tied in the urethra was connected with a piece of rubber tubing which passed into a bowl of antiseptic lotion under the bed. The abdominal incision was partly closed, just sufficient opening being left for the passage of the five glass tubes to the surface.

The suprapubic wound was dressed on the day following the operation, and then on every other day until the eighth day after the operation. For the whole of this time the wound remained clean and free from urine. A slight serous discharge from the granulating wound coagulated and glued the dressings to the tubes and rings. The patient was perfectly comfortable and the whole of the

urine drained away through the catheter in the urethra.

On the eighth day after the operation the tube sutures were removed and the catheter was withdrawn from the bladder. Within a few hours following the removal of the tube sutures urine began to escape from the suprapubic wound, this being the first time for urine to appear since the operation, and a small urinary fistula formed. A catheter was again secured in the bladder and a firm pad of dressings applied to the suprapubic wound. Urine continued to escape from the incision for the whole of the eighth day, but on the ninth and tenth days it greatly diminished, and on the twelfth day it entirely ceased. After this the wound rapidly healed.

The author regrets now that the tube sutures were not left in position for another four or five days. Eight days form apparently too short a time in which to obtain firm healing of the bladder incision. As long as the tube sutures were left in position the bladder wound remained water-tight and no urine escaped. The urinary fistula which formed after the removal of the tube sutures was only a small one and closed in four days, the suprapubic wound at this period being in an advanced state of healing by granulation.

The tube sutures appear to have some advantages in closing the bladder after suprapubic cystotomy.

1. The tube sutures are easy to insert and to remove.

2. No buried sutures are left in the bladder wall to form a focus for suppuration.

3. The bladder can with safety be sewn up after cystotomy of suprapubic drainage.

4. In septic conditions of the bladder the glass suture tubes provide a ready channel of escape for any inflammatory exudates which may collect along the bladder incision.

5. In cases where the bladder has to be reopened after operation, as, for example, to arrest hemorrhage, remove clots, or provide drainage, the suture tubes afford a ready guide to the bladder incision.

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SCRUBBING ULCERS.

To stimulate healing in chronic varicose ulcers E. C. Beck in the *Medical Record* recommends scrubbing with soap and water. The patient is placed on the operating table and deeply anesthetized. All crusts surrounding the ulcer or on any portion of the leg are removed. An ordinary stiff brush, such as is used by the operator and his assistants for cleansing the hands before operation, is to be thoroughly sterilized. Tincture of green soap and sterile water are all that is necessary. The soap is poured on the ulcer, just enough water to cause a froth, and the scrubbing may begin. At first diseased and spongy tissue comes off in a dark black or grayish mass. A little clean water now and then will wash off the debris and show us how far we have succeeded. Scrubbing should be continued until the base of the ulcer is smooth and the edges stand out clearly, red and hard, giving the whole the appearance of being "punched out." There will be some bleeding, but the bleeding seems to be conducive to quick healing. Strenuous scrubbing of the edges is necessary; it smooths them off sufficiently, and the hyperemia resulting therefrom will show its beneficial results within twenty-four hours, when the little blue line of infant granulations will bring its glad tidings of healthy recovery. Before applying a wet dressing of either boric acid or bichloride solution, the entire ulcer and its immediate vicinity are painted with tincture of iodine to prevent reinfection as much as possible. As a rule when the patient regains consciousness extreme pain will be experienced, and if thought advisable some form of hypnotic may be administered. But if the bandage is kept moist with warm solution the pain and burning are only of short duration.

THE STARVATION CURE FAD.

The Lancet pays its respects to this fad in an editorial. Says our English contemporary: That some people eat too little and that others eat too much; that most people occasionally, and some habitually, eat unsuitable food, or eat suitable food in an improper manner or under improper circumstances; that food that is suitable for one person may be quite unsuitable for another person, or even for the same person at another time and under other conditions; and that from these deviations from normal conduct arise many of the ills that flesh is heir to—these, surely, are truisms. And from concentration of attention on truisms without due regard to perspective most fads take their births. Mr. Upton Sinclair, who focused public attention with regard to the Chicago stock-yards in the direction previously indicated in these columns by our Special Sanitary Commissioner, has views on fasting as a cure for nearly every ill, and his opinions have received wide publication in lay magazines and in the daily press. They have lately appeared in book form. Suffice to say that he advocates in many circumstances abstinence from food of all kinds for a period lasting until the return of hunger—which, according to him, within a day or two of beginning the fast, disappears and remains in abeyance for a varying period of time. In response to a circular of inquiry sent out by Mr. Sinclair as to the results in those known to have followed his method, he received reports of benefit in twenty-seven cases of indigestion, fourteen of constipation, and in smaller numbers of colds, tuberculosis, poor circulation, headaches, anemia, scrofula, bronchial trouble, syphilis, liver trouble, general debility, chills and fever, blood poisoning, ulcerated leg, neurasthenia, locomotor ataxia, sciatica, asthma, excess of uric acid, epilepsy, pleurisy, impaction of bowels, eczema, catarrh, appendicitis, valvular disease of heart, insomnia, gas poisoning, grippe, and cancer. We are by this time quite prepared for the familiar phrase that follows: "Forty-five of the cases having been diagnosed by physicians." We have some curiosity to know how it happened that "out of 109 persons who wrote" (in reply to Mr. Sinclair's questions) "100 reported benefit and seventeen no benefit" (p. 103), and suggest that statements of this kind, even if capable of some explanation not clear to the ordinary reader, may have led to the neglect by responsible journals to take his work seriously—a conspiracy of silence in which Mr. Upton accuses *The Lancet* and the *New York Times* to participate. Mr. Sinclair, believing the meat which he had hitherto been taking to have been the cause of his headaches, dyspeptic and other symptoms, gave up eating meat. The troubles disappeared and he became forthwith a vegetarian on principle as well as in practice. But, alas! in about three years the same troubles reappeared, notwithstanding his strict adherence to a "raw food dietary." Then he read somebody's book, with the result that he returned to the use of meat, and presto! his troubles disappeared again. He has apparently since stuck to the use of meat, which he found suited him better than vegetarian food—though the same indispositions the cure of which he now attributes to meat food had previously disappeared on his taking to vegetarianism; as he expresses the opinion that, so far as he is concerned, beef-steak is the most easily digested and most easily assimilated of foods (p. 168). The fact is, that in lack of general applicability lie the uselessness and danger of all faddist methods, while Mr. Sinclair errs beyond that point, in that he lays down as principles things that are clearly unsound. For instance, he asserts: "That anyone could die of lack of food without feeling a desire for food," is absurd on the face of it. Again, discussing alleged deaths under the fasting cure, he says that "people might die very frequently" (under the treatment) "without that being

any argument against the cure." That would depend upon whether the relation of cause and effect were established. He and thinkers of his caliber fail to see that the converse proposition is equally true—viz., that people may get better under any kind of "cure" without that being any argument for the cure. The multiplication by the food faddist of plans to avoid dyspepsia is for the most part an imitation of the policy of the householder who, hearing of a patent stove that was warranted to save half his coal, bought two stoves that he might save all of it.

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UNEXPLAINED HEMORRHAGE.

W. Hale White, in *The Lancet*, points out that many a time it has happened that a physician or surgeon has, on account of hematuria, thought that a stone of new growth existed in the kidney, but a most careful exploration, or in some cases excision, of the kidney has failed to find any satisfactory explanation for the hematuria. These, says the author, are examples of what has been called renal epistaxis, or, to use a phrase more widely employed, essential renal hematuria. There are so many causes of hematuria that skepticism as to the existence of essential renal hematuria is justifiable, but there is no doubt that it exists. I have recently collected several cases. Senator says: "There still remains a group of cases in which nothing can be found in the kidneys to account for the hemorrhage." Herrick gives the case of a man aged forty-five, who had had hematuria for ten months. The cystoscope showed that the blood came from the right kidney; nephrotomy revealed nothing abnormal. The kidney was healthy histologically. Klemperer describes the case of a young man aged twenty-two, who had hematuria which proceeded as shown by the cystoscope from the left kidney. Nephrectomy was done and the kidney was perfectly healthy both to the naked eye and microscopically. Wulff and Schenk describe similar cases, the bleeding coming from only one kidney, which both to the naked eye and histologically was normal. I could quote other cases from medical literature; they will be found in the article on essential hematuria to which I have referred. I have carefully read the whole of the literature to which I have access in London, and I think there is no doubt that bleeding may take place from the kidney without there being any evidence of the naked eye or microscope that the organ is diseased. For example, a woman, aged thirty-five years, was admitted under Mr. C. J. Symonds for profuse hematuria, it appeared that the blood came from the right kidney. This was excised; it was healthy both to the naked eye and histologically. I wrote to the patient twenty-seven months after the operation, and she said that her health and weight had improved greatly; she had had during this time one attack of hematuria presumably from the other kidney. This condition occurs both in women and men, but more often in men. The patients are usually under thirty; it is very rarely fatal. I submit that the most feasible explanation of these cases is that in them a poison—analagous to the menstrual hormone—is formed somewhere at intervals, and this reaching the kidney by the blood, and having a special affinity for the minute renal vessels so damages them that they rupture and the blood escapes; if this is so these cases have the same explanation of those of bleeding from other parts of the body which we have been considering.

It is well known that hematemesis is an early symptom of splenic anemia and that it occurs long before the final stage of hepatic cirrhosis. May it not be that here we have absorbed from the spleen and carried to the stomach by the blood a toxin having the property of damaging the gastric vessels and so letting blood through and causing hematemesis?

I have left till last the mention of epistaxis, for I have very little experience of it unless as a complication of well-

known disease, but there is a very widespread belief that it is especially common in boys at the age of puberty who are perfectly healthy. If this is so, it seems difficult to resist the explanation that the epistaxis is due to the circulation in the blood of an unknown substance which has the special property of damaging the vessels of the nasal septum so as to cause hemorrhage from them.

I hope you will not consider this address too fanciful, but with the strong evidence we have that the menstrual flow is provoked by a hormone secreted by the ovary, it seems to me worth while to consider whether any pathological hemorrhages might not be produced in a similar way, and I think it possible that they may, being caused by endothelial toxins which act on the walls of the vessels from which the bleeding comes.

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HYPERTENSION.

Arthur R. Elliott, in the *Therapeutic Gazette* for December, considers the hygienic and dietetic treatment of arterial hypertension. In order to obtain a clear view of the problem involved, in control of high blood pressure, we must not lose sight of the fact that we are dealing with a symptom rather than a disease. We may perhaps venture the assertion that high blood pressure is a reaction to some form of systemic toxemia. Whether the case be primarily nephrotoxic, autotoxic or chemotoxic, the blood pressure elevation is probably produced by the circulating toxins. This fact of etiology being conceded, it follows that the first principle of treatment is to prevent the formation and absorption of pressor toxins. Failing in this, their removal becomes the next important object of attention. One great difficulty that confronts us at the outset of treatment in any given case of high blood pressure is in deciding whether we should or should not attempt to lower the blood pressure at all. The effects of arterial hypertension are mechanical and compensatory adjustment soon alters the dynamics of circulation to conform to the new status in the peripheral field. As Hare puts it, the tissues become accustomed to a new standard of pressure with which it is unwarrantable to interfere. To tamper much with the blood pressure by active treatment in certain cases, is almost certain to induce subjective discomfort and cardiac embarrassment. Another point it is well to bear in mind is the possibility that high blood pressure is not of itself the cause of most of the symptoms attributed to it, but that it is only when cardiac function becomes disturbed that symptoms of importance arise. A distinct advantage is gained if we can enforce occasional periods of rest in bed for our hypertension patients. A periodic week in bed on a low diet with daily massage will accomplish more for the inveterate case of high blood pressure than almost any other measure of treatment. Warm baths constitute a valuable measure of relief to these individuals. The generally accepted cardinal rules in the dietetics of high blood pressure are: (1) Reduction in the total quantity of food. (2) Limitation of protein. (3) Milk diet. (4) Fluid restriction. (5) Salt restriction. He advises, too, that psychological treatment of these cases be considered. They are easily encouraged, very easily depressed. It is a matter of therapeutic importance, therefore, to keep them hopeful and encouraged.

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BURNS.

Horace H. J. Brown, of Wilsonburg, W. Va., recommends the following prescription in burns:

Zinci oxidi (ground in oil).3 ounces.
Phenolis lig.....2 fl. drachms.
Petrolati albæ, q. s. ad....1 pint.

M. Sig.: Apply on sterile gauze and cover with absorbent cotton and roller bandage.

THE DOCTOR HIMSELF.

PRIVILEGED COMMUNICATIONS BETWEEN PHYSICIAN AND PATIENT*.

By BENJ. A. GAGE, Cleveland, Ohio, in the *Cleveland Medical Journal.*

IT is believed that many practising physicians and surgeons do not possess accurate knowledge of the nature, extent and limitations of the doctrine of privileged communications, so-called, and although it is not possible to treat the subject extensively in all of its numerous aspects within the limited time allowed, it is proposed to suggest and discuss briefly some of its practical phases.

I. What is Meant by the Term "Privileged Communications."

Interviews with numerous physicians disclose that it is commonly understood by them to comprehend any and all knowledge acquired by the physician from his patient while that relation subsists, and it is further generally believed that around such information so acquired is thrown by force of law the guard of absolute and unqualified secrecy, under all circumstances and upon all occasions. It is the purpose of this paper to dispel the error of this belief.

With reference to physicians and patients, privileged communications may be broadly defined to be those statements made by the patient to the physician, and the information acquired by the physician from the patient while the relationship existed, which, while relevant to matters in dispute, are rejected by the courts or made inadmissable by statute upon the ground of public policy.

This definition is broad enough to be consistent with the holdings in various States hereinafter mentioned, but which holdings, however, are by no means uniform.

II. Origin.

The basis of all of our law is the common law of England, and though it has been frequently modified by statute in various States, we are compelled upon occasion to examine its precepts for guidance.

By that common law communications made by a *client* to his *attorney,* as such, were privileged, and the attorney might not be compelled to testify as to any knowledge gained by him from the client while the relationship existed. But communications made by *patients* to their *physicians,* as such, were not privileged and eventually our courts and legislatures came to recognize the fact that there was no adequate reason for according the privilege in the one case and denying it in the other.

As was said by the New York Supreme Court (77 N. Y. 569):

"The ground on which communications to counsel are privileged is the supposed necessity of a full knowledge of the facts to advise correctly and to prepare for the proper defense or prosecution of a suit. But surely the necessity of consulting a medical adviser when life itself may be in jeopardy is still stronger."

It is, of course, manifest, that a complete and full disclosure of any and every fact, whether past or present, whether objective or subjective, whether pleasant or disagreeable, which may, in the judgment of the physician, have any bearing on the case at hand, is a prerequisite to accurate diagnosis and successful treatment.

The public health, of course, depends upon the health of individuals, and in this the State is vitally interested, and to insure such disclosures of fact by patients,

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without fear of repetition by the physician, many but not all of our States many years ago adopted statutes *intended* to prevent the divulging in evidence by the physician, against the patient's will, of information acquired by such physician in his professional relation with his patient. This class of evidence is rejected by the courts because, as has been said, "Greater mischiefs would probably result from requiring or permitting its admission than from any refusal to receive it."

All of these statutes have the same purpose though they vary in form, and the construction put upon them by various courts will be hereafter discussed.

III. Ohio Statute.

The source of the privilege in this State is found in Sec. 11494 of the General Code of the State of Ohio, a portion of which is as follows:

"The following persons shall not testify in certain respects. . . . A physician concerning a communication made to him by his patient in that relation, or his advice to his patient."

A careful reading of the quoted portion of this statute will at once make prominent the fact that the act falls far short of securing *absolute secrecy* on the part of the physician; that in fact it only prohibits *testimony* by such physician, or in other words, he is not permitted to *give evidence* in any legal proceeding as to communications made to him by his patients. And, contrary to the prevalent understanding, there is nothing in the act to prohibit a physician from divulging information acquired by him, and communications made to him by his patients, except as stated, so long as he adheres to the truth, and in the event of such disclosure there is no liability upon him for slander or libel, inasmuch as in such a case the truth is a complete defense.

If, however, he utters false statements concerning his patients, even though he believe them to be true, he is liable in an action for slander. Alpin vs. Morton, 21 O. S. p. 536. This is an interesting case. Evidence was offered that the defendant, a physician, had asserted in substance that the plaintiff, an unmarried girl, was pregnant, and his defense apparently was that he believed that to be true. The court, however, in its opinion said:

"A physician is not more protected from liability for his slanderous statements on the ground merely that he believes them to be true, than other persons. Indeed, the fact of his being a physician in cases of this kind, should be rather a ground of caution than of license in the expression of his opinions, except under such circumstances that they may be regarded what are termed 'Privileged Communications.' They can not be regarded as such unless made in good faith, and the relation between the parties by whom and to whom the communication is made, is such as to render it reasonable and proper that the information should be given."

The judgment in this case for $2,200 damages was affirmed, but the court intimates, as has been seen, that a physician may divulge, to one particularly and peculiarly interested in the patient, facts which he believes to be true, without liability, if he acts without malice and in good faith.

IV. When the Rule Applies.

It is uniformly held that:

"In order for such statutes to apply it is necessary that the relation of patient and physician should exist, or at least that the circumstances should be such as to impress the patient with the belief that it does. It is not necessary, however, in order to exclude the testimony of the physician, that he should have been employed by the patient, for if this were necessary the fact that physicians are frequently called in by other physicians, or by friends, or even strangers,

would to a large extent destroy the usefulness of the statute." 32 A. & E. Enc. n. s. 48.

And it seems to be generally held to be requisite, in order that the statutory privilege may apply, that the person consulted must be a duly admitted or authorized physician or surgeon under the law of the State, and that the information must have been acquired by him in his professional capacity and must have been reasonably necessary for intelligent treatment or advice. However, when a physician is sent to ascertain the state of health or condition of a person, under circumstances which do not lead the patient to believe that he is to be treated by such physician in his own interest, or that he is acting otherwise than in the interest of the person who sent him, the rule of privilege does not apply.

V. Application.

The doctrine has been held to prohibit the testimony of assistant surgeons, house and visiting physicians, etc., in hospitals, who, in the course of their duties or proper practice, interview or examine hospital patients, Smart vs. Kansas City, 208 Mo. 160. And to prevent the introduction of the hospital records, Smart vs. Kansas City, 208 Mo. 160, or records of Boards of Health, or original certificates signed by attending physicians. Davis vs. K. of H., 165 N. Y. 159. The Supreme Court in this case very aptly remarked:

"The disclosure by a physician, whether voluntarily or involuntarily, of the secrets acquired by him while attending upon a patient in his professional capacity naturally shocks one's sense of decency and propriety, and this is one reason why the law forbids it. The form in which the statements are sought to be introduced is of no consequence, whether as a witness on the stand, or through the medium of an affidavit, or a certificate; all are equally under the ban of the statute."

And courts have refused to receive the testimony of a physician as to conditions discovered by him which existed prior to his attendance, and for whch he had not treated the patient, Nelson vs. Oneida, 156 N. Y. 219. The rule applies in all its force to physicians attending unconscious or dying persons, Mayer vs. K. of P., 178 N. Y. 63, or those under such disability as lunacy, etc., 23 A. & E. Enc. n. s. 86. The rule applies not only to the physician in charge but to those attending or consulting with him.

On the other hand, some courts have permitted physicians called to attend victims of accident, to testify as to statements made by the patient as to the method or manner in which the accident occurred, Green vs. Met. Street Ry. Co., 117 N. Y. 201. This decision, however, was rendered by a divided court, and a dissenting judge, in his opinion, justly observed:

"Under just such conditions an intelligent and successful physician might much more surely ascertain the probable or possible nature or extent of the injury by getting at the facts of the accident, than he could by the usual method of a diagnostician."

And when a physician is sent merely to ascertain the extent of the injury, or the circumstances attending the accident, with a view to defending a possible claim for damages, and the patient is not deceived but knows the object of the visit, the rule has no application.

VI. Laws of Other States.

For the purpose of comparison, excerpts from the statutes of a few of the other States bearing upon the subject are given.

New York—The New York enactment is as follows:

"A person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending the patient in a pro-

fessional capacity, and which was necessary to enable him to act in such a capacity."

Michigan—The statute of Michigan is very similar to that of New York, and it will be noticed that the word "information" is used instead of the word "communication" found in the Ohio statute, which gives the prohibition a much wider scope. It will also be noticed that the prohibition is not limited to testimony but to disclosure. However, this is not effective to prevent a physician from disclosing, outside of court proceedings, information acquired by him in his relation with his patient, inasmuch as there is no penalty attached to so doing.

A recent Michigan statute (Michigan Statutes 1905, Sec. 136), provides that in prosecutions under the law for illegal marriage to diseased persons:

"Any physician who has attended or prescribed for any husband or wife for either of the diseases mentioned, shall be compelled to testify to any facts found by him from such attendance."

North Carolina—By statute in North Carolina the presiding judge is given a discretion in the admission of confidential communications. The statute provides, among other things, as follows:

"That the presiding judge of the Superior Court may compel such disclosure if, in his opinion, the same is necessary to a proper administration of justice."

Iowa statute:

"No . . . practicing physician . . . . shall be allowed to give testimony to disclose any confidential communication properly entrusted to him in his professional capacity, as necessary and proper to enable him to perform the functions of his office."

This statute is very similar in terms to that of Ohio, and yet the Supreme Court of Iowa has frowned upon any attempts to limit its application and has given to the statute a liberal construction:

"The statute should have a liberal construction by the courts. Accordingly we have held that the expression 'Confidential communications' as used in the statute is not to be restricted to the mere verbal statements made by the patient, but must be construed to include all privileged information acquired by the physician through his own observation or examination."—Baths vs. Railway Co., 124 Iowa, 623.

Missouri:

"The following persons shall be incompetent to testify . . . . A physician or surgeon concerning any information which he may have acquired and which information was necessary to enable him to prescribe for such patient as a physician, or do any act for him as a surgeon."

This, if properly construed, seems a model statute, and the Supreme Court of the State of Missouri has uniformly given force to the reason of the rule and to the purpose of the act.

Indiana—The Indiana Legislature passed an act which prevents physicians testifying "as to matters communicated to them as such by patients in the course of their professional business, or advice given in such cases." The language of the Supreme Court in the construction of this act is interesting and is to be commended:

"It must be regarded as settled that the prohibition of the statute (subject to the qualification that the objection founded thereon may be waived by the patient himself, or by those who represent him) extends to all communications made by patients to physicians in the course of their professional business, to all advice given, and to all information acquired by the physician, by observation or otherwise, by means of his professional relation to his patient, and in his professional intercourse with him. All that the phy-

sician sees or observes is as fully within the statute as matters which are communicated to him by the patient."

Without detailing the facts in various cases in these States in which these statutes have been involved, suffice it to say that the courts outside of Ohio have uniformly discarded refinement of reasoning and have leaned toward a broad and liberal interpretation of the statutes in the endeavor not to narrow, but to widen their scope, and generally have so construed the acts as to cover any information or knowledge acquired by the physician from his patient, whether by oral or written communication, or by observation, or examination while the relationship existed. Such a construction is manifestly the sensible one, and the only one which will give effect to the intent and purpose of the enactments.

Ohio—The rulings in Ohio, however, present a strong contrast to those above mentioned. In the case of The Met. Life Ins. Co. vs. Howle, 68 O. S. p. 614, one section of the syllabus is as follows:

"It is not competent to prove by a physician the communications made to him by his patient in that relation, but such physician may testify as to facts which are within his knowledge independent of such communication. *He may testify as to the condition and state of health of the patient as well as the treatment by him prescribed for his patient.*"

In other words, the Supreme Court of this State has limited the application of this salutary statute to actual oral or written communications made by the patient, and has greatly diminished the effect of the legislative act. It is manifest that if a physician be permitted to testify as to the objective symptoms disclosed by the patient, to his condition and state of health, and to the treatment prescribed, but little is left to the imagination, and he may well be permitted to disclose all that was told him by the patient, either orally or in writing.

VII. Nature and Duration.

The privilege accorded by these various enactments is personal with the patient and does not terminate with the cessation of the relation.

"The privilege with reference to the information acquired by a physician in the performance of his professional duties remains in force until removed by the patient or his representative. It does not cease on termination of the relation by death of either the patient or the physician." 23 A. & E. Enc. n. s. 89-90.

The statute of Ohio contemplates a waiver of this privilege by the patient:

"But the . . . physician may testify by express consent of the . . . patient; and if the . . . patient voluntarily testifies the . . . physician may be compelled to testify on the same subject." Sec. 11494 General Code.

While there has been a diversity of holdings on the question as to whether or not the privilege might be waived after the patient's death, the better rule, and that supported by the greater weight of authority, is that:

"The patient may waive the privilege for the purpose of protecting his rights, and the same waiver may be made by those who represent him after his death for the purpose of protecting rights acquired by him." Jones on Evidence, Sec. 761.

But in New York it has been held that if the patient did not waive the privilege during his life, the waiver could not be effected by others after his death. Loder vs. Whelpley, 111 N. Y. 239.

VIII. Other Phases.

Bearing in mind that in this State there is nothing in the law prohibiting a physician from revealing truthfully, outside of legal proceedings, communications made to him by his patient, and knowledge acquired by him from such patient, interesting phases of the subject are suggested. Not infrequently in the practice of every physician occasions arise, which

require no illustration here, when a physician doubtfully hesitates between that silence demanded by strict professional ethics, and that disclosure seemingly required by public interest and the welfare of society. The problem presented may be solved by considerations of the greatest good to the greatest number, and hence a physician's duty may be fixed at disclosure, but he is met by the practical suggestion, and the hard fact that if a physician acquires a reputation for divulging supposedly confidential communications his patients will soon be few and his practice reduced to the minimum. It is not the purpose of this paper to undertake to solve such problems.

IX. Suggestions.

We have seen that the Supreme Court of this State, by interpretation of the statute, has narrowed its scope and limited its operation, and has confined the privilege given by the statute to written or oral communications merely. The remedy lies in the passage of another legislative act amending the present statute by the addition of words which shall make it clear and plain that the term "communications" shall include all information and knowledge of whatsoever sort or description, and however acquired, by the physician from his patient while that relation exists, and reasonably necessary for the purposes of diagnosis or treatment.

Grateful acknowledgment is given to Mr. Alfred Clum, of the Cleveland bar, for his excellent article on "Privileged Communications" recently appearing in the *Ohio Law Reporter*.

LORD LISTER.

Last month we offered our own humble tribute to this great scientist. This month we take pleasure in reprinting the able and dignified appreciation of *The Lancet*.

"Full of years and honors, the greatest Englishman of the nineteenth century has gone to his rest. We claim this position for Lord Lister, not only by reason of his actual achievements in the preservation of life and in the relief of suffering, but still more by reason of the qualities of intellect and of character which rendered those achievements possible; qualities among which an absolute devotion to the ascertainment of truth was perhaps the most conspicuous. To him, as to the few philosophers of approximately equal rank who have preceded him, an established truth was a possession too inestimable to be measured by ordinary standards of value; and no pains, no self-sacrifice, could be too great to be spent in its attainment. He had the signal advantage, as regards to contemporary fame over the only men who could be mentioned as his intellectual peers, over Newton, over Thomas Young, over Darwin, that the problems to which he addressed himself were of direct and immediate bearing upon the welfare of the human race, and that his solution of them placed him at once in the forefront of human benefactors. Those problems, and especially the central one among them, the cause of decay and putrefaction in wounds, and the reasons why these changes were more prone to occur when wounded persons were collected together within a limited space, had occupied the minds of many keen observers at many times and in many countries; and William Clowes, the great English surgeon of the sixteenth century, has left behind him not only a description of the conditions which could scarcely be surpassed, but also a lucid statement of the reasons which forbade him to accept the belief that they were due to the use of poisoned bullets or weapons by the Spanish soldiery against whom his countrymen were contending in the Netherlands. In those days the circumstances conducive to widely spread gangrene hardly existed except in time of war, and, save for a few so-called "hospital" cases, it was not until the beneficent action of anesthetics

began to bring great numbers of peaceful people under the hands of the surgeon that there arose a pressing danger of the practical neutralization of the expected good by the occurrence of great and wholly unexpected evils. Even in private houses, and, as it seemed, amid surroundings of the most favorable kind, the operations which, because they could be rendered painless, were freely and hopefully undertaken, were in a lamentable proportion of cases rendered of no account by death; while the surgical wards of many hospitals became veritable pest-houses, from which escape with life could hardly be regarded as probable. It seems scarcely credible today, but is none the less true, that only half a century ago it was gravely proposed that surgical hospitals should be temporary buildings, which should be destroyed by fire, as dangerous nuisances, after the fulfilment of two or three years of existence, or as soon as gangrene became of common occurrence among the inmates.

"At this time Lister, who was the son of a scientific father, and had been trained in a scientific direction by his influence and his example, had already for some years been engaged in careful research, exercising and developing the faculties essential to accurate investigation. He had learned how to frame and how to verify or to refute hypotheses; he had learned how to establish facts in such a manner as to render each one a stepping-stone to further progress; he had learned to question the accuracy of his own conclusions, and this the more stringently, the more they seemed to be conducting him towards some wished-for goal. He was at the zenith of his powers, gazing sadly at the evils of unknown source and origin by which the best skill of the surgeon was so constantly defeated, when the news came to him of Pasteur's discovery of the cause of putrefaction, and he hastened to acquaint himself with details which he at once perceived, with the intuition of genius, might supply him with the clue of which he was in search. Each of the two great men had vied with the other in extolling the share taken by his fellow in the production of the total result; and it is manifest that there can be no question of originality between them. It is unlikely, to say the least, that the attention of Pasteur himself would ever have been directed towards hospital phenomena, and the range and scope of those phenomena were sufficiently wide to furnish complete occupation for many years of strenuous and persevering industry. We have sometimes been reminded by the history, of what has been recorded by Coleridge concerning the origin of penny postage. A pedestrian, wandering in Cumberland in the early thirties of the last century, found a poor girl crying in the road because she was unable to pay the postage of a letter from her brother, who had gone south in search of work. The pedestrian paid the postage, and gave the girl her letter. Most tourists, in similar circumstances, would probably have done the same; but this tourist was Rowland Hill, and the incident germinated and bore fruit. Most surgeons would have been interested in Pasteur's discovery; but the only one who saw its full significance was Lister, and his life was thenceforth devoted to the realization of the vision which had been revealed to the insight of his genius, but which never could have been realized without the most patient, continuous, and unwearied industry. The generation is passing away which witnessed the labors of the great discoverer in the direction of perfecting his work; but none of those who now profit by it should forget the opposition which it encountered or the placid courage with which successive positions were either justified and maintained or were abandoned as soon as their originator became convinced of their unnecessary character. Gradually, and step by step, the conditions essential to the asepticity of wounds and injuries were established;

and the great philosopher was revealed to the world in full luster of his fame.

"The picture is worth gazing upon. For the details of Lord Lister's career, the opposition which his discoveries encountered, and the completeness with which this opposition was overcome, we refer our readers to the notice of his life which occupies other portions of our columns. But those who know or who study these details will recognize that even his luminous intellect would have failed to impress itself upon his generation had it not been allied with other qualities not less great, and, unfortunately, not too common. The brilliant imagination, the almost inspired genius, the philosophic insight, would have been of comparatively small account without the support which they derived from unflinching courage and untiring industry. Without these aids, the sneers and contumely with which his earlier announcements were received could scarcely have failed profoundly to discourage him, or even to interrupt the course of his investigations; but he passed through the turmoil as if hardly aware of its existence, and confined himself from first to last to the facts and questions which were of essential bearing upon the truths which it was his mission to establish. Perhaps few things were more galling to his early adversaries than the manner in which he refrained from railing accusation, and, while never omitting to deal with any real difficulty, treated difficulties which were imaginary or irrelevant with an indifference that must sometimes have been more galling than expressed contempt. Eager to teach and to explain, he was always accessible to those who sought with sincerity for enlightenment, and the stores of his knowledge and of his experience were at the command of the humblest of those who asked for them. It was his privilege to complete the great work which he began, to build up from the foundation a system of asepticism which leaves nothing to be desired by those who have mastered the principles on which it rests, which has opened all the great cavities of the body to the healing hand of the surgeon, which has removed the pains or preserved the lives of countless thousands of sufferers in every portion of the globe, and which has raised English surgery to a pinnacle from which not even the presumptuous ignorance of politicians will be able to take it down. Our country has given to the world and to the profession the record of a stainless life, of an intellect at once brilliant and profound, of an industry which never wearied, of a courage which never failed; and these qualities, sufficient to constitute greatness in any department of human activity, were so combined in Lister as to justify our opening claim on his behalf. He was unquestionably the greatest Englishman of his century."

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REMINDED WHA' HE LEF' HIS KNIFE.

A colored preacher was vehemently denouncing the sins of his congregation. "Bredern an' sistern, Ah warns yo' against de heinous sin o' shootin' craps! Ah charges yo' against de brack rascality o' liftin' pullets! But, above all else, breddern and sistern, Ah demolishes yo' at dis hyer season against de crime o' melon stealin!" A brother in a back seat made an odd sound with his lips, rose and snapped his fingers. Then he sat down again with an abashed look. "Whuffo, mah frien'," said the preacher sternly, "does yo' r'ar up an' snap yo' fingahs when Ah speaks o' melon stealin'?" "Yo' jes reminds me, pahson," the man in the back seat answered meekly, "wha' Ah lef' mah knife."—*San Francisco Argonaut.*

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VON NOORDEN IS COMING.

Our readers will be interested to know that Prof. Dr. Carl von Noorden, of Vienna, has accepted the invitation of the New York Post-Graduate Medical School and Hospital for a series of lectures on problems of metabolism for October, 1912.

THE SICK ROOM.

MEDICAL NURSING.*

By LEON LOURIA, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Medical Treatment of Dyspepsia.

NEXT to the diet is medical treatment which is instituted to meet different symptoms as they arise during the long course of chronic dyspepsia.

Persistent constipation, which in this condition is quite obstinate, is not always relieved by selected diet, and calls for administration of different laxative mineral waters like Hunyadi Janos, Rubinot, Carlsbad, Marienbad, Pluto, etc. In some cases we prefer the vegetable group of laxatives like rhubarb, aloes, podophyllin, cascara.

The treatment of the stomach can be instituted by local measures of cleansing it of the tenacious mucus covering the inflamed mucous membrane, and to stimulate this glandular activity the most effective one is lavage or irrigation of the stomach with lukewarm water of 1% salt or 2% solution of bicarbonate of soda. The deficient ingredients of the gastric juice can be successfully substituted by drugs. In most of these cases there is a marked deficiency in hydrochloric acid. We may then prescribe diluted hydrochloric acid, in doses of fifteen to twenty drops, well diluted with water and taken slowly after meals. A combination of hydrochloric acid and nux vomica is a very popular one. The latter stimulates the secretion of gastric juice and increases the motility of the muscles of the stomach. In cases of venous engorgement, due to stasis in portal circulation, a calomel purge once a week brings prompt relief. In some cases pain is so prominent that we must resort to small doses of opium or belladonna or cocaine after meals. Although the disease itself is limited to changes in one organ, the effect of it is far more reaching, involving the whole body, particularly the nervous system. The patients are highly irritable, depressed, and at times even mentally unbalanced, and require just as much care of the body as a whole as of their stomach. Therefore, a change of scenery, a change of climate, and a change of surroundings, is one of our therapeutic measures not to be forgotten.

Gastric dilatation or gastroectasis either as an acute or chronic condition. The acute cases are very grave and fortunately very rare. They usually follow an injury of the epigastric region or an abdominal operation. The symptoms consist of a sudden onset, vomiting of large quantities of fluid, collapse, and an enormous distension of the epigastrium. The symptoms develop very rapidly and the only prompt and radical relief is obtained by the introduction of the stomach tube and siphoning out the contents of the stomach. The nurse, the surgical one particularly, shall keep in mind the dangerous condition, and she must be familiar with the use of the tube, which in these cases is a life-saving measure.

Chronic dilatation is most frequently caused by an obstruction of the pylorus at the outlet of the stomach by a growth or scar on the inside, or by a tumor on the outside, compressing the pylorus. It may also be caused by relative or absolute insufficiency of the muscular power of the stomach, due to a repeated overfilling of the organs with food and drink. The excessive eaters and drinkers, brewery workers, for instance, who consume enormous quantities of beer, are frequently victims of such a dilatation. Tea drinkers in Russia present such cases. Dilatation may develop at times rapidly, so to say, a result of an over-distension of an already distended stomach, and may end fatally.

*A series of lectures given to the Seniors of the Jewish Hospital in Brooklyn.

I recollect a case where I had to perform an autopsy on a man who died suddenly in one of the tea rooms so popular in Russia. He had been drinking tea continually from two o'clock in the afternoon to nine o'clock in the evening, when suddenly he fell off the chair and died. At the autopsy, after the incision of the abdomen, I found a membrane covering the whole anterior surface of the abdominal cavity. This membrane stretched from the epigastrium to the symphysis pubis, and on palpation I found the fluctuation and was very much baffled in trying to name that membrane. It was on my examination in medicine and I almost flunked. No other abdominal viscera could be seen. The membrane filled out the whole abdomen. After an incision a fountain of clear straw-colored fluid arose in the air a couple of feet high and gradually the membrane shrunk and took the shape of the stomach. This distended organ contained over four gallons of fluid. The acute dilatation was the immediate cause of the man's death, and on the certificate issued by my teacher, it was very appropriately stated: "Mr. X. was drowned in tea."

The symptoms of dilatation are identical with symptoms of aggravated chronic catarrh accompanied with characteristic vomiting, nature's effort to relieve the distended organ. Belching, regurgitation of partly digested food, acid in taste and of an offensive odor, is very common. The bowels are constipated; stools are hard and dry. On inspection we notice distension of the epigastric region and we can readily elicit a splashing sound, clappotage by striking gently with the tips of the fingers over the distended stomach. This sound is caused by shaking up of fluid and air contained in the organ.

The treatment consists in regulating the diet, in restricted use of liquids, in so-called dry diet. If the obstruction of the pylorus is caused by a tumor or a scar, then excision only can give permanent relief. When operation is impossible, the treatment consists in regular washing of the stomach, which cleanses the organ of its contents, prevents fermentation and putrefaction of the food retained, and forestalls the toxic effects of such abnormal conditions on the whole body.

Gastric Ulcer.

Gastric ulcer, often called round ulcer or peptic ulcer, is a disease presenting an ulceration of the mucous membrane of one or more layers of the wall of the stomach. We don't know the real cause of ulcer. Some maintain the view that it is caused by certain altered conditions of the blood, resulting in insufficient nourishment of the cells of the mucous membrane. Others claim that it is the result of a self-digestion of the mucous membrane of the stomach, the nutrition having been impaired through the influence of the nervous system or to the change in the arterial vessels. We usually find an excess of hydrochloric acid in cases of ulcer and this hyperacidity is held responsible for the destruction of the tissues. It is more common in young girls than in men. Anemia, chlorosis, tuberculosis, are predisposing factors. The symptoms are identical with the symptoms of indigestion. The pain is more or less constant at the pit of the stomach and is increased immediately after taking food. The pain is of a sharp, burning, gnawing character, radiating to the back. There is marked tenderness on pressure, vomiting is frequent, and the rejected matter contains undigested particles of food, is very acrid and very frequently shows evidence of blood to the naked eye. In severe cases where the erosion involves a blood vessel, a hemorrhage occurs and large quantities of pure, bright red blood is vomited. Such hemorrhages are very characteristic for diagnosis of gastric ulcer. If the blood is retained in the stomach and vomited later the color changes to a darker one. If already

passed through the intestines we may have black, tarry stools.

Gastric ulcer runs, as a rule, a slow course. The symptoms are not always characteristic, and frequently the existence of an ulcer is only evidenced by sudden attacks of perforation due to the destruction extending through all layers of the mucous membrane, and if no previous adhesion with the neighboring organs has been formed, such a perforation of gastric ulcer leads to a general peritonitis and death.

The diagnosis is at times quite difficult. Chronic gastritis, ulcer of the duodenum, neuralgia of the stomach, gall stones, must be considered. The treatment calls for as complete rest for the stomach as possible. No food of any kind is administered by mouth, and the patient is fed by rectum. After the acute symptoms have subsided we begin with a small quantity of milk diluted, given at regular intervals, say a drachm every fifteen minutes, gradually increasing to two, three, or four drachms, or one or two ounces every two hours. For pains, small doses of morphia; for hemorrhage, absolute rest in bed, on which we insist not only in cases of hemorrhage, but as a general measure in all cases of ulcer. The rest will insure the healing of the ulcerated surface. Place the patient in Trendelenburg position, head down; first, decrease the supply of blood to the abdomen; then to forestall the acute anemia of the brain; sinking, fainting sensations experienced by patients after a large loss of blood.

Drugs intended to stop the hemorrhage directly are rarely used, because all fluids by mouth are to be withheld and we can hardly expect their local action. The treatment by drugs is limited during the acute stage to small doses of morphia, which act as a stimulant, insuring at the same time as much rest as possible. During the hemorrhage we apply an ice pack to the epigastrium which reduces the supply of blood, quiets the pain, and by its weight helps to immobilize the stomach. In chronic forms of gastric ulcer I prefer the local application of a flaxseed poultice, which undoubtedly has a quieting and healing effect. Most ulcers of the stomach heal under medical treatment. The chronic latent ulcer does not yield to medical treatment as readily as the first mentioned one. We can hardly induce a patient who has no pain and no other objective symptoms of gastric ulcer to stay in bed for three or four weeks, and after the application of flaxseed poultices these patients are usually more reluctant to accept systematic treatment; in these cases, therefore, good results are obtained by surgery. After the patient returns to a soft and regular diet, the convalescence can be hastened by administration of different tonics, according to the indications in each case.

Gastric Cancer.

Gastric cancer or carcinoma of the stomach is a malignant growth, occurring most frequently at the pylorus, making constant progress, destroying the tissues, infecting the lymphatic glands. Heredity plays an important part. It develops after the fortieth year, although it has been observed in younger people.

Cancer of the stomach is the most frequent cancer of the body, next to uterus. It is usually a primary cancer. The development is usually slow, insidious, accompanied with symptoms of indigestion; progressive in character; associated with pain and marked emaciation. In the majority of cases vomiting is a predominant symptom, especially when the cancer is located at the pylorus and obstructs the outlet of the stomach. This is followed by a dilatation of the organ, which tries to relieve itself daily or every second day by attack of vomiting.

Pain is experienced an hour or two after taking food, due to the irritation of the tumor by the contents of the stomach and by the formation of gases caused by deficient digestion. The

gastric juice shows a deficiency or absence of free hydrochloric acid and other ferments. When the cancerous tumor is eroded, a cancerous ulcer presents itself and the patient may have attacks of vomiting with blood, which if it is not brought up immediately has a dark appearance, the so-called coffee-ground vomiting, very suggestive in this disease.

The diagnosis of cancer is based upon the chain of symptoms just described, supported by the feeling of a tumor in the epigastric region which presents itself in about 75% of all cases. Prognosis is bad.

Cancer of the stomach lasts between nine and fifteen months, and the treatment is only symptomatic to relieve the pain, assist the digestion, emptying the stomach when the food can not pass through the pylorus, by ordering stomachics to increase the activity of the peptogenic glands of the stomach and by combating the general debility by administration of tonics and concentrated foodstuffs, predigested, substituting, so to say, the deficient digestion. In case of obstruction of the pylorus, the aid of surgery is called upon; by excision of the tumor, or by making an artificial connection between the stomach and the intestines, the life of the patient can be prolonged.

Gastralgia or cardalgia, spasm of the stomach, or neuralgia of the stomach, is a painful condition of the sensory nerves of the stomach, induced by various sources of irritation. It is characterized by violent paroxysms of gastric pain associated with extreme weakness. Leaving out cases of pain met in gastric ulcer, we may find patients suffering from severe attacks without any anatomical changes in the stomach, at least such changes which can be demonstrated.

Neurasthenic hysteria, chronic malaria, gout, chronic diseases of the central nervous system, like tabes, very frequently during their course are accompanied with attacks of neuralgia of the stomach, so-called gastric crises. The attack comes on very suddenly, it is excruciating in character, located in the epigastrium. The pain is somewhat relieved from external pressure, and the patient himself frequently tries to press the stomach against some hard substance, finding relief. The pain lasts from a few minutes to half an hour or longer, gradually subsides, leaving the patient much exhausted. The prognosis as to life is favorable; as to recovery, not so. As the underlying cause of the neuralgia is a chronic one, the attacks of pain occur at intervals during a long period. Our treatment has to be directed first to alleviate the pain during the attack, which is best done by administration hypodermically of one-sixth to one-eighth grain of morphia, and second by directing our measures to the underlying cause, to the chronic disease of the blood or nervous system.

I have tried to give you a condensed picture of the most frequent diseases of the stomach. Now we will go down to the intestinal tube and will consider the most common diseases of the intestines.

(To be continued.)

SODIUM CACODYLATE IN ERYTHEMA MULTIFORME.

W. Cuthbertson, of Chicago, reports a case of erythema multiforme in a woman aged 27 that had existed from childhood, occurring every fall and disappearing in the winter. Intramuscular injections of three-quarters of a grain of sodium cacodylate, given twice a week for several weeks, completely relieved the attack. Each injection was followed by relief and the disease disappeared entirely, leaving her in better condition, according to her own statement, than she had ever been in since it first occurred. From his experience in this case, Cuthbertson would recommend sodium cacodylate injections for trial in all cases of erythema, more especially in the angioneurotic type.

REFRACTION.

THE DETECTION OF ALLEGED VISUAL DEFECTS.*

ALBERT H. ANDREWS, M. D., Chicago, in the *Journal of Ophthalmology.*

THE fact that every railway surgeon, whether he is interested in the eye or not, is liable to be called upon to test eyes for the amount of vision, makes the subject of simulated visual defects of general interest. The objects prompting persons to simulate blindness may be: (1) In cases of children the desire to get out of school or other work. (2) In adults to escape from military duty. (3) The desire to elicit sympathy, especially in hysterical individuals. (4) In cases of injury, loss or impairment of sight is often alleged in order to secure the greatest possible amount of damages. In modern times and in this country the latter object is by far the most frequent.

These malingerers may be placed in three classes: those alleging total blindness of both eyes, those alleging total blindness of one eye, and those alleging impairment of vision in one or both eyes.

It is very unusual for anyone to simulate total blindness and when it is undertaken it is ordinarily easy to detect. Watching the person when he doesn't know he is observed is usually sufficient. Simulation of blindness in one eye is more frequent.

The tests to detect this condition may either be objective or subjective. The objective tests are those over which the patient has no control, and consist of the appearance of the eye; the movements of the eye and certain reflexes of the pupil. The subjective tests are made by testing the vision under varying conditions and are usually dependent upon the patient's ignorance of what the result of the test would be if his alleged defect were real.

*Read before the American Association of Railroad Surgeons, October 18, 1911.

In discussing the various cases, I shall make a second classification, differentiating between those which the general surgeon can and should be able to make and those which ordinarily fall under the domain of the oculist. When a bright light is directed into the normal eye the pupil contracts and when the light is taken away or diminished the pupil dilates. This reflex is produced by a light striking the sensitive retina, the impression being carried back to the optic tract and is referred to the centers of the third or motor oculi nerve. The stimulus thereby causes contraction of the pupil. In certain diseases of the nervous system, locomotor ataxia, for instance, the pupil may not contract to light even though the vision may be good. However, if the pupil does respond to light it is a positive indication that the retina is sensitive and that the eye is capable of seeing.

In addition to the direct we have the consensual reflex, which is the contraction of the pupil in one eye produced by light directed into the opposite eye if both eyes are normal. Light directed into a seeing eye will produce the same pupillary changes in the opposite eye, whether the opposite eye sees or not. If light is directed into the blind eye it affects neither that pupil nor the opposite normal eye. It follows then that if an individual alleges blindness in one or both eyes and yet the pupil responds to direct light, he is malingering.

If the eye should be so diseased that we can not see the pupil or if the pupil should be bound down by adhesions, so long as the retina is sensitive, we will get consensual reflex; that is, the pupil of the opposite eye will contract to light. But if light directed into an alleged blind eye does not produce contraction of either that pupil or the opposite, the probabilities are that the eye is blind.

Another method of detecting simulated blindness of one eye is to have the patient read with a pencil held about two-thirds of the distance from his eye to the printed page. If but one eye is being used the words lying directly beyond the pencil from the eye will be obscured, while if both eyes are being used the patient will read directly across as though no pencil were between his eye and the page. When this is done it is positive evidence of malingering. A third method is to carry a lighted candle across the field of vision from the sound eye toward the alleged blind side. Instruct the patient to indicate when the light has disappeared. If he claims that the light has disappeared before the shadow of the bridge of the nose falls on the pupil of the healthy eye, he is malingering, or if he continues to see the light after the shadow falls on the pupil of the sound eye he is malingering. A fourth method is to have the patient look with the alleged blind eye at something he holds in his hand. No matter if he is totally blind in that eye and has been for a long time, he will automatically fix his blind eye on the object held in his hand. As a rule, those who are pretending to be blind will refuse to fix the eye on the hand, thus proving that they are attempting to deceive.

All the tests so far mentioned are made without the use of lenses or special apparatus and should be familiar to every surgeon doing railway work.

Among the tests used by oculists and requiring special apparatus may be mentioned the following:

(1) A convex glass of 6D is placed before the sound eye. In this way the eye is made artificially myopic, so that its far point lies at a distance of about 17 cm. (it being presupposed that the eye is emmetropic). The eye can therefore read fine print only at a distance of 17 cm. or less, but no further. After placing the glass before the eye we first make the patient read at quite a short distance, and then slowly and imperceptibly move the book farther and farther away. If it is possible in this way to withdraw the book considerably farther than 17 cm. without the patient's ceasing to read, it proves that he has been reading with the eye alleged to be bad. That is, he began reading with the good eye and, when the book was carried too far off for that, continued with the other eye, without noticing the transfer of vision from the good to the alleged blind eye in the employment of the two eyes. (Fuchs.)

(2) We make a show of occupying ourselves with the sound eye only. We hold before the latter a prism in such a way that the refracting edge is horizontal and extends transversely across the middle of the pupil. In this case two images of every external object will be thrown upon the retina, one transmitted through the free half of the pupil, and the other through the half covered by the prism, and the eye sees double the object upon which it has been fixed (monocular diplopia)—a fact which the patient will admit without hesitation, since, of course, it is the sound eye only that is concerned in the matter. Now the prism is imperceptibly pushed along until it covers the entire pupil. Now the eye that is provided with the prism again has only one single retinal image, which, however, is thrown upon a higher or lower point of the retina than is the case in the other eye. If now there is still double vision (binocular diplopia), it is a proof that both eyes see. If we use the reading test for this examination and compel the person under examination to read sometimes the upper, sometimes the lower of the two double images, we can determine directly the visual acuity of each eye separately without the patient being aware of it. (Alfred Grafe).

(3) Place the cobalt glass in the trial frame before the sound eye and direct the individual to look at an incandescent globe and tell what he sees. He will be unable to analyze the light if he gets additional light in the opposite eye, so if he is malingering he will probably at-

tempt to close the alleged blind eye or he will insist that he sees nothing, while if he is not malingering he will say that the filament will appear white with a line of bright red on either side of it. If he is a few feet away the whole line of yellow light may appear red.

The simulation of visual impairment is much more difficult to detect than alleged blindness. The patient may have normal vision and still claim to have much or little impairment, or he may have some actual impairment and exaggerate the amount. This type of malingerer is best detected by increasing the impairment by use of glasses. He will usually determine that he will not read below a certain line. When that line is found and recorded, put a glass before his eye, for instance a plus 1. D and record what he reads, and then add another plus 1. D and record what he reads with the combination. Now add a minus 2. D which neutralizes both the others and see if he reads as he did before the glasses were put on. The tests can be varied indefinitely and continued until the malingerer is thoroughly confused. He can not establish a basis for comparison nor can he remember what he claimed to be able to read if after various changes are made, some of the earlier tests are repeated. The different plus and minus spheres can be used and also the cylinders. If in addition to these tests a mydriatic is used and they are repeated the findings become still more convincing.

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THE DIAGNOSIS OF EYE-STRAIN.

Ellice M. Alger, in the *Medical Times*, says that the train of symptoms indicative of eye-strain is not always as clear as the diagnostician might desire. Every attempt to observe things distinctly, and especially objects near at hand, involves more or less muscular adjustment and ocular focusing, and this, like all other muscular effort, induces proportionate fatigue. After a variable period of rest, the muscles involved regain their tone and are ready for fresh efforts, but muscles which have been exercised beyond their physiologic capacity not only tire more readily but require longer periods of rest before their tone is restored.

It is entirely possible to strain normal eyes by continuous overuse, but there are some conditions under which eye-strain is practically universal. Some neurasthenics possess such slow metabolic processes that they bear fatigue of any sort badly, and their eyes tire with corresponding facility. Ordinarily most neurasthenics suffer from eye-strain, a fact which is not only to be considered as a symptom of their general condition, but sometimes as its cause. The chief strain, however, comes from the abnormal eye, be it hyperopic or astigmatic. Such eyes not infrequently have perfectly normal vision, and the patients have no idea wherein lies the source of their trouble. It is the muscular effort necessary to the sharp vision that causes the fatigue, while the over-stimulation of tired muscles causes a long train of symptoms, sensory, motor and secretory.

Among the objective symptoms which should warn the physician of the presence of eye-strain are the elevation or depression of an eyebrow, the formation of abnormal wrinkles in the forehead and at the angle of the eyes, the constant blinking of the eyes, and holding the head in unnatural positions in the effort to see distinctly. On the other hand many cases have no definite indications pointing to the eyes, and the physician must diagnose eye-strain from separate symptoms found clinically to be of etiologic relation, as in chronic headache. This symptom has been estimated to be present in over eighty per cent of the cases suffering from this condition.

CORRECTION OF VERY LOW ERRORS.

It is now many years, says the *Optical Journal and Review,* since the gospel of eye-strain was first preached, and the result has been a very great increase in the wearing of glasses and a proportionately greater increase in the numbers of those who examine the eyes of these wearers and recommend glasses for the same. It has been held, and generally approved, that all examinations must be very painstaking, and that the purpose of such examinations must be the prescription of glasses which will not only be very exact, but also that they shall be the measure of the full ametropic error, so that when worn the accommodative function will surely be out of function for distant vision.

But as in the case of all ideas that come to be accepted as absolutely true, there comes a time when doubts arise. In this particular case the doubt takes the form of the question: "Why should the ciliary muscle be so carefully put out of function for distance and the extrinsic muscles not?" "Why shouldn't functioning for one be just as good as functioning for the other?" We can remember the time, and not so long ago at that, when it was taken as a matter of course that if the refractive error was an eighth of a diopter it must be corrected, or the results would be dire. Yet at present there is an ever-increasing number of refractionists who are questioning the necssity of such a correction, but who claim that the benefit arising from the wearing of such very low power glasses is not due to the wearing of the lenses as such, but to the wearing of the glasses as glass; that is, that such cases have sensitive retinas, and the glass acts to cut off a portion of the light rays that cause the irritation, which would be equally effective were the lenses plano. So when cases are recited of wonderful results from O. U. plus ⅛ D., they ask: "Why don't you try planos and make sure?"

On the other hand, there are some cases, especially where drugs have been in previous years instilled into the eyes, when very low-power lenses will give just the amount of help to the ciliary to produce fairly comfortable vision. For such cases the progressives are recommending the use of the dynamic tests, either dynamic skiametry or the cross-cylinder dynamic test, which latter is a subjective test. On the whole, the question of the relief of uncomfortable vision where the refractive error is low needs careful revision and experimentation.

TREATMENT OF STONE IN URETER.

Not all cases of stone caught in the ureter will require operative removal, as is shown by the case reported by F. Weisz. The patient showed all the typical symptoms and on passing a catheter into the right ureter, a resistance could be detected two to three cm. above the vesical orifice. Ten c.c. of sterile, warm glycerin were injected into the ureter with the result that the calculus was promptly voided. A second, larger stone was soon mobilized, but became caught in the fossa navicularis so that a meatotomy was required to extract it. The patient has remained free from symptoms ever since.

VERRUCA PLANA.

Le Pontoi gives, internally, magnesium oxide or sulphate, in doses of eight to twelve grains, and a large tumblerful of milk and lime-water. For local application the ointment recommended by Dubreuilh should be used:

Hydrargyri chloridi mitis	24 grains.
Acidi salicylici	24 grains.
Resorcini	24 grains.
Adipis lanæ	1 drachm.

Derrier prefers to use:

Acidi acetici glacialis	1 part.
Sulphur precip	2 parts.
Glycerini	3 parts.

M. F. Pigmentum.

MEDICAL PHARMACY.

IS BITTERNESS A NECESSITY?

JURI LLOYD, in *Eclectic Medical Journal,* propounds the interesting question: Is the sensation of bitterness in bitter substances a necessity? Are morphine and strychnine and quinine and such typically bitter alkaloids and alkaloidal salts *necessarily* bitter to the taste? In a former article by the same author distinctions as regards the shades of bitterness were drawn, contrasting the nauseating bitterness of apocynum with the clear-cut bitterness of quinine sulphate, and the sharper and more persistent bitterness of strychnine, all of these substances being bitter, but each being characteristically different from the others. The writer then indulged a cautious criticism of the "Pharmacopœia's" description of blood-root as "bitter," while to him the characteristic tongue touch of that drug related it to *peppery* rather than *bitter* substances. Shadings were progressively drawn from the nauseating bitterness of apocynum and alstonia constricta, down through a chain of relatively decreasing bitter substances, such as strychnine, quinine, morphine, brucine, gentian, hops and such, to the feeble bitterness of caffeine, until finally it became a question of whether the particular substance under discussion was actually bitter or not. The same connection was made between the shadings in peppery substances, such as capsicum, black pepper, "grains of paradise," pepper-grass, bloodroot and other peppers.

Came then the summing up of it all, and, as concerns the *bitter,* the questioning is "Is this sensation (nerve touch) that we call bitter, an *inherent quality* of the material, even of alkaloidal entities, or is it due to an unknown something, mingled with the material that is accepted to be bitter because the substance has been known only in bitter form. Is it an inherent quality, unalterably and irrevocably present, or, by excluding an isomer, can the bitterness be overcome without altering the therapeutic or physiological phase of the alkaloid?" The questions were then asked, "Is morphine necessarily *bitter?* Is *strychnine* necessarily bitter? Are the bitter alkaloids and their salts *necessarily* possessed of this nerve-impression quality? Is it possible to separate from morphine an isomeric something, as yet unknown, that will dispossess the real alkaloid of its *bitter* alkaloids, and yet leave it possessed of its soporific qualities? Is it thus possible to exclude from strychnine its bitterness, the real toxic agent, remaining physiologically and therapeutically active?"

Take another view of the subject. Is it possible to *paralyze* the bitter phase of the material and *annihilate its bitterness,* leaving it yet possessed of its physiological and therapeutical qualities, somewhat as in stero-chemistry one looks mentally at a twisted molecule? Or, again, as in catalysis, may a substance, by contact action, render a soluble alkaloidal salt inactive to the taste?

PRACTICAL DISPENSING HINTS.

Joseph Hart, in the *Bulletin of Pharmacy,* gives the following useful dispensing suggestions:

A minute amount of white petrolatum is about the best thing that we have found to keep camphor in a powdered condition. The presence of petrolatum does not interfere with the use of the camphor.

The application of a solution containing 15 grains of oxalic acid to 1 ounce of water with a camel's hair brush every half-hour or so is said to remove very

effectually the blackness from around a freshly blackened eye.

The addition of a small amount of starch to liquid tooth preparations containing chalk retards the formation of that hard and difficultly diffusible sediment which is so annoying when one tries to make a sale.

I find it quite convenient to use a drachm of water to two ounces of quinine and rub to a powder, allow the alkaloid to dry and then use the powdered quinine for prescription work. This enables one to dispense smaller capsules, obviates the frequent refilling of the case bottle and does not require so much space for weighing nor waste in handling.

The proper cutting and placing of cotton over an unfilled box of capsules, tablets, etc., also the arrangement of evenly folded powders in the box, the neatly tied cap, unsoiled label, and the legibly signed, not stamped, prescription check conduce to "Elegant and Careful Dispensing."

By the use of a small amount of water with a prescription for iron sub-carbonate, either alone or in combination with other dry powders, to be put up in capsules, one is enabled to use a much smaller capsule. And the finished capsule will be bright and clean, the capsule being easily packed and consuming about one-fourth the amount of time as by the old method.

The irritation following the application to the eyes of a solution of tannic acid in glycerin made with the aid of heat may be obviated if the acid be allowed to dissolve by cold maceration in the pure glycerin. I keep a clear, lightly colored solution in concentrated form for rapid dispensing.

Gasoline cleans and polishes my ointment containers quite prettily.

The filling of frequent prescriptions for gargles containing some form of iron and a minute amount of antipyrin for coloring, represents an application of our knowledge of incompatibles as a means of obtaining innumerable and economical colors.

Another way of saving soap shavings is to make a shampoo for people who object to green soap. My formula, which yields a pretty clear and economical finished product, is: Water and alcohol, of each 4 ounces; castile soap shavings, 1 ounce; potassium carbonate, 2 drachms; tincture of quillaja, 1 ounce; perfume to suit. Of course, the soap, water and potassium carbonate are first added, followed by the alcohol and tincture and perfume. After twenty-four hours, filter.

The prescribing of hydrogen peroxide with Dobell's solution should be discouraged. They are not only incompatible chemically, but with some samples physically, the patient in more than one case becoming alarmed over the gas evolved and the change to a pinkish color.

A large number of physicians are now verifying the seemingly preposterous assertion that strychnine is more efficacious when given in solution than when given in tablets, pills, etc.

The results of quite a number of trials favor the administration of Fowler's solution in milk in preference to other vehicles.

Pancreatized olive oil is strongly advocated as an application to a dry scalp the night before the shampoo.

We frequently have orders for various amounts of silver nitrate in either glycerin or water. Some samples of silver nitrate produce the dark coloration at once and others in four or five hours, while others produce a cloudiness at once. After a series of experiments I find that these troubles may be greatly retarded or completely obviated by the use of pure neutral glycerin or distilled water to which an almost infinitesimal amount of pure concentrated nitric acid has been added.

NATIONAL FORMULARY INNOVATIONS.

A fifth installment of new formulas for inclusion in the forthcoming edition of the British *National Formulary* has been issued. They include powder numbers and menstrua for fluid extracts, viz.: Baptisia, chionanthus, cocillana, condurango, dioscorea, drosera, echinacea, euphorbia pilulifera, helonias, nepeta, rhamnus catharticus, senecio, and trifolium, as well as the following:

Fluid Glycerates.

Fluid glycerates are intended to be of the same strength as fluid extracts. They contain approximately 50% by volume of glycerin, and no alcohol. The drug should be in a No. 20 or 30 powder unless otherwise directed. For drugs that do not require either acid or alkaline menstruum, they may be prepared by the following:

General Process.

Drug, in coarse powder	1,000 grams.
Glycerin	500 c.c.
Water	1,500 c.c.
Chloroform-water, a sufficient quantity to make	1,000 c.c.

Mix the glycerin and water, and moisten the drug thoroughly with a portion of the mixture; then *pack it very lightly* in a cylindrical percolator, and add enough of the menstruum to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for forty-eight hours; then allow the percolation to proceed until the drug is exhausted, using first the remainder of the menstruum and afterward chloroform water. Reserve the first 500 c.c. of percolate, and evaporate the remainder on a water-bath, the weaker portion first, then the stronger until it is reduced to 600 c.c.; then add the reserved portion, and continue the evaporation until the product measures 1,000 c.c. Allow the preparation to stand for a few days, then decant the clear portion, and strain the remainder.

The following modifications are given:

Fluid glyceratum glycyrrhizæ—Mix 50 c.c. of ammonia water with 600 c.c. of the glycerin-water menstruum, moisten the ground drug with the mixture, and complete the preparation by following the general process for fluid glycerates, excepting that the mixed percolates are to be evaporated to 990 c.c. and the remaining 10 c.c. ammonia-water added to the cold product.

Fluid glyceratum grameriæ—Use 600 c.c. of menstruum to moisten the ground drug.

Fluid glyceratum rhamni purshianæ—Use 500 c.c. of menstruum to moisten the ground drug.

Fluid Glyceratum Rhamni Purshianae Aromaticum.

Cascara sagrada, in No. 20 powder	750 grams.
Fluid glycerate of glycerrhiza	250 c.c.
Lime	38 grams.
Glycerin	375 c.c.
Water	2,625 c.c.
Oil of fennel	1 c.c.
Oil of cloves	1 c.c.
Oil of cassia	1 c.c.
Chloroform-water, a sufficient quantity to make	1,000 c.c.

Mix the lime with 1,500 c.c. of water and stir in the cascara sagrada, moistening the drug evenly and thoroughly. Dry the moist powder by exposure to a moderate heat until air-dry. Mix the glycerin with 1,125 c.c. of water, and moisten the cascara sagrada with 600 c.c. of this menstruum; *pack it lightly* in a cylindrical percolator, and add enough of the menstruum to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having covered the percolator, macerate the mixture for forty-eight hours. Then allow the percolation to proceed slowly until the drug is exhausted, using first the remainder of the menstruum and afterwards chloroform-water. Reserve the first 375 c.c. of the percolate, and evaporate the

remainder on a water-bath, the weaker portion first, then the stronger, until it is reduced to 450 c.c.; then add the reserved portion, and continue the evaporation until the liquid measures 747 c.c. When cold, add the fluid glycerate and volatile oils, and mix thoroughly. Allow the preparation to stand for a few days, then decant the clear portion and strain the remainder.

Fluid glyceratum rhei—Use 500 c.c. of menstruum to moisten the ground drug.

Syrupus Iodotannicus.

Iodine	2.7 grams.
Tannic acid	5.4 grams.
Sugar	800.0 grams.
Distilled water, a sufficient quantity to make	1,000.0 c.c.

Reduce the iodine to a powder and introduce it into a flask with the tannic acid and 450 c.c. of distilled water, and then heat the mixture on a water-bath at a temperature not exceeding 50° C., agitating the flask from time to time until a drop of the liquid ceases to give a blue coloration with starch T. S. Then add the sugar, and when this is dissolved, remove the flask from the water-bath, allow the syrup to cool, and finally add enough distilled water to make the product measure 1,000 c.c.

The last formula is Baudoin's process (P. F. p. 784), with quantities altered to accord with the fluid system.

SANTONIN.

J. A. Munck, in the *Eclectic Medical Gleaner,* gives the following summary of the properties and virtues of this useful drug: Santonin is the active principle of santonica or Levant worm seed (Artemisia pauciflora). It can be used in powder, but is more conveniently given in a tablet triturate, which always divides the dose accurately, one-fourth of a grain being the average dose. If a smaller dose is desired the tablet can be divided, or the dose can be increased to two or more tablets. It is not objectionable to a child and may be eaten like candy, dissolved in water, or swallowed like a pill.

The dose of santonin is from a quarter of a grain to two grains. The United States Dispensatory gives the dose from ten to thirty grains, which is evidently excessive and dangerous. The smallest dose of any drug that will have the desired effect and afford the needed relief, is the quantity that should be used. The Eclectic method of prescribing medicines in frequent small doses is much preferable, as a rule, to giving large doses at longer intervals. An over-dose of five grains, or more, is poisonous and dangerous, as it has been known to cause convulsions and death. With ordinary caution, however, no dangerous effect is ever produced. During the past forty years in which I have used the medicine freely (and I commenced using it when I started in practice), I have never seen the slightest evil effect and regard it as perfectly safe in all cases if used in the small dose. When administered it imparts a bright saffron hue to the urine, so that it is always best to advise the mother or nurse what to expect, as they might become frightened by the sudden change in the color of the urine, if not informed.

Santonin is known as a good worm medicine, and so it is; but this action represents only a small fraction of its real value. Its full value is too little known, for which reason I desire to call attention to the agent at this time. As a pleasant and reliable vermifuge it is the remedy par excellence and will expel both stomach and pin worms. Worm symptoms are various and numerous, but those usually present in such cases are: whitish ring about the mouth, slight swelling of the upper lip, much picking of the nose, and the uttering of shrill cries during sleep. Although these signs are all well-known worm symptoms, yet they do not infallibly denote the presence of worms; but they do always indicate irritation of some kind in the intestinal

canal, whether produced by worms or some other cause, and call for santonin.

A quarter or half-grain tablet, according to the age of the child, should be given every two hours until three or four doses are taken, then followed by some mild purgative. I do not say that a physic is absolutely necessary to success, but a soft state of the bowels will naturally aid the expulsion of worms if there are any. If there be no worms in the stools it is safe to conclude that there are none and that the irritation which caused the symptoms was produced by something else than parasites. Afterwards, the medicine should be continued in less frequent doses for one or more days, when the worm symptoms will have disappeared and the child is well. Sometimes, after a vermifuge is given and no worms are seen, the conclusion is reached that the worms have been killed and dissolved in slime. Anybody who chooses to believe such a fiction is, of course, welcome to do so, but it is not in the nature of things for living matter to dissolve and disappear in that maner.

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ERGOT.

Chas. C. Haskell, in the *Indianapolis Medical Journal* for December, considers ergot and substitutes for it. Accuracy of dosage, the *sine qua non* of rational therapeutics, can generally be secured either by using certain pure principles, definite chemical compounds free from substances which are inert or detrimentally active or by using galenical preparations which have been assayed by chemical means and adjusted to a definite standard of strength. At present it is impossible to say which of the active constituents is to be desired in the therapeutic use of ergot. Dale, the greatest authority on the pharmacology of ergot, has only recently said that careful clinical observation alone can decide whether any one of these is sufficient to produce the typical ergot action. Possibly, as seems to be the case with digitalis, all of the active constituents are necessary. It would seem, then, that chemical investigation of ergot has not yet put us in a position to standardize accurately preparations of this drug by chemical methods. This being the case, it is not surprising to find that clinicians have endeavored to secure substitutes for ergot in obstetrical practice. As to the use of quinine, an analysis of the results, clinical and laboratory, shows that quinine evidently has a decided influence on the movements of the uterus. The effect of quinine, however, differs decidedly from that of ergot, and the indications for the use of these drugs by the obstetrician are entirely distinct. Quinine, apparently, causes an exaggeration of the normal uterine movements, contraction and relaxation succeeding each other in their usual relation. Ergot, on the other hand, exaggerates the contractions at the expense of the phase of relaxation, tending to produce a tonic contraction and thus close the sinuses. It would seem then that quinine would be of value in the earlier stages of labor, when uterine inertia is present, while ergot is indicated after the completion of the third stage. Pilocarpin has been found to be of decided value in stimulating the normal uterine contractions. Pilocarpin has other actions, however, which tend to make its use as a uterine stimulant inadvisable or even dangerous. As to the bark of cotton root, further observation is necessary to establish its value as an oxytocic.

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MALARIAL CACHEXY.

Quininæ hydrochloridi	48	grains.
Ferri pyrophos. sol. Merck...	24	grains.
Arseni trioxidi	½	grain.
Oleoresinæ capsici	6	grains.

M. Div. in konseals. No. 24.

Sig.: One konseal three times daily, after meals.

ELECTRO-THERAPY.

EDITED BY NOBLE M. EBERHART, A. M., M. D.
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THE ELECTRO-CHEMICAL (IONIC) TREATMENT OF CERTAIN GYNAECOLOGICAL AFFECTIONS.

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(Continued from the February number.)

Ionic Penetration.

I SHOW you in two tubes examples of ionic penetration, compared with ordinary diffusion, through a piece of the wall of the fresh stomach of the ox, the animal having been killed a few hours only before the experiments.

In these two specimens a solution of $CuCl_2$ has been placed on the mucous surface of each piece. In the simple diffusion case after five hours the copper had absolutely failed to enter into the mucous membrane, there being only a slight coloring on the surface, easily washed off.

In the case of the specimen under the same conditions in the other tube a current of five ma. during five hours has been passed through the copper solution and the tissue from the positive pole, the total current being thus 90 coulombs, or about five gynecological doses.

You will find under the microscope on the table a section of this specimen. The report from Dr. Leslie Buchanan, who kindly made the sections for me, is as follows: "That which was subjected to ionization is readily distinguished by having a portion of bluish-green color, highly condensed and fairly firm in comparison with the rest of the tissue. The cut surface of this condensed portion shows a greenish color to about half its thickness (the total thickness of the tissue is 6 mm.) and exposure of the cut surface to a solution of sulphide of ammonium results in the conversion of the greenish color into a very deep brown or almost black. The portion treated simply by diffusion shows no change from the normal either in color or texture. Sections prepared for the microscope show that in the case of the ionization the metal has passed through the mucous membrane and submucous tissue and lodged in the tissue of the muscle below. The metal is exceedingly finely divided, and is manifestly lodged *in* the tissue, not simply deposited on it—*i. e.*, the metal is intra-cellular, not simply inter-cellular. It is evident that the mucous membrane has opposed considerable resistance to the passage of the metal, as a large amount of it is deposited on the surface of the tissue in addition to what has penetrated. In the case of the diffusion no metal is found either by the microscope, or by change of color with ammonium sulphide, in the tissue itself."

Combined Electrolysis and Ionic Penetration.

I have here a piece of fresh meat, and I can show you by means of it an example of combined electrolysis and ionic penetration. I push an electrode of copper and one of platinum into the tissues, attaching the copper probe to the positive pole and the platinum to the negative. I am not placing them too far apart, since I have here only a small electro-motive-force to work with, and so I am diminishing the resistance and thus increasing the current.

We will allow the current to remain in action for about fifteen minutes, and you

will find at the end of that time that the platinum probe is easily lifted out of the tissue, for the reason formerly mentioned, whereas the copper is adherent, since the O and HCl which have separated at the positive pole out of the NaCl and H_2O of the tissue have coagulated the albumin of the meat around the electrode. If the action is allowed to continue sufficiently long a severely caustic action will be produced.

These are the results of electrolysis; but something else has taken place as well. If you examine the part where the copper was you will find that the HCl resulting from the electrolytic action has gradually dissolved some of the metal, and the resulting copper ions have traveled a certain way on towards the negative pole. This is ionic penetration. If the process had been allowed to continue sufficiently long it would have been impossible to remove the copper rod without tearing away some of the flesh. In that case, if the current be reversed for a few minutes, the copper being thus attached to the negative pole, sodium ions will come to it; the tissue will be softened and the copper can then easily be lifted out.

If by this time you are coming to the conclusion that I am over-estimating the importance of ions, let me point out to you what I mentioned in proof of the fact that in a solution of 1% or less of NaCl practically all the particles were ionized. Now the salines of our body are in concentration of about 0.9%, so that all the salts in our tissues must be present as ions; and since all vital action is accompanied by electric change, and no chemical alterations can take place without these electrically charged bodies, life must be impossible in the absence of ions.

Action of Chemicals Electrically Driven Into the Tissues.

I have said that all vital action is accompanied by electric change, and therefore by electric currents, since, whenever there is a difference of potential in the presence of ions, a current must result. Now Pauli, in his book, "Physical Chemistry in the Service of Medicine," states that "differences in the concentration of ions brought about through (bringing about?) differences in their migration velocities constitute the source of differences in the electrical potential."

That this was true I had long hoped, since it would explain what to me had formerly been puzzling—namely, how was the chemical, which had been electrically driven into the tissues, and had then assumed an insoluble form as in the case of copper—how was this to be disposed of, and how could it in that form act therapeutically? For more than a year I have, by means of a very delicate mirror galvanometer, made many attempts to prove or disprove this. I asked an expert in electro-physics and one in electro-therapeutics to join me in the investigation, with the result that we all came to the conclusion that this statement was not true. However much it might be true to others it, therefore, had to remain to me untrue.

Recently, however, I again attacked the problem and discovered that, though not true, it was yet a half-truth. No matter how great might be the difference in concentration of contiguous saline solutions, no current could be observed. I noticed, however, that there was sometimes a slight deflection of the needle at the moment of insertion of the platinum wires, but this current immediately stopped when the wires were at rest in the solutions. This led me to the conclusion that the difference in concentration alone was not sufficient to cause a current. If, however, whilst the wires were at rest and dipping into solutions of widely different degrees of concentration, the fluid was then shaken, at once and on every such occasion a marked deflection of the galvanometer needle ensued. Therefore, there is a difference

of potential and a resulting current, but only when there exists at one and the same time a difference of concentration *and a flow.*

Since, then, this is exactly what exists in a greater or less degree throughout living organisms, there must in and around the deposited insoluble powder ('n present case the insoluble oxy-chloride of copper) be constant, though weak, galvanic currents, and consequently some degree of dispersion of the substance by galvanic action. These vital electric currents, which are continually in action, will therefore continue to carry on the work and thus cause the diffusion and final removal of this apparently inert powder by means of ionic migration.

I find that the more the disturbance of the solutions of different degrees of concentration the greater is the current generated. Every muscular movement, therefore, must assist in diffusion of the substance introduced into the tissues, even when it has been rendered insoluble by the action of the oxygen and chlorine of the tissues.

Selection of Cases and Ion.

In the selection of a suitable ion, one must be guided by the nature of the case. The object of the treatment is to remove sepsis and the accompanying inflammatory exudations. Cases of acute inflammation, of threatened suppuration, and, *a fortiori,* cases of actual pus formation, and also cases of cystic disease, are absolutely unsuitable. Apart from these unsuitable cases, however, there remains a very large number of gynecological affections hitherto treated in a more or less perfunctory manner because with very little hope of permanent benefit. Is it not possible, however, may I venture to say, is it not almost certain, that nearly all of those pathological conditions unsuitable for this treatment might have been prevented if ionic medication had been applied in time and in a thorough manner?

As to curettage, the nature of the case must determine the wisdom of doing this before trying the ionic treatment. This operation is not excluded, but I have found it, since I began the method I am advocating, very seldom necessary.

The Iodine Ion.

When the affection partakes at all of a subacute nature I prefer to start with iodine as the ionic agent. Iodine being electro-negative, the minus pole must be the active one, and the electrode there should be a carbon one, such as I show you. There is no advantage in applying the iodine wholly in an uncombined form, because, as you will observe from one of the diagrams, it at once becomes converted in NaI when it enters into the tissues. The solution I employ is a 2% one of iodide of potassium combined with 0.2% of liquor iodi.

The iodine ion will reach the cellular tissue of the pelvis by diffusion, whilst it will penetrate electrically into the protoplasm of the tissues which it has reached during the process of diffusion. I find that it can be detected in the saliva twenty-five minutes after the beginning of the application, whereas by diffusion alone it takes several hours to reach the mouth from the vagina.

Where there is inflammation of the tubes, the ovaries, or the cellular tissue, if no suppuration is present the iodine ion has given me good results. I am bound to admit, however, that I do not confine the treatment to ionic applications in these cases, but usually finish off with some other form of electric energy, usually the high frequency. Therefore it may be difficult to determine the relative value of these two forms of electrotherapy. The high-frequency currents may be able to complete the cure, but I am certain they can never destroy sepsis as ionic medication can.

Of the *mercuric ion* I have no experience. It is said to have been very serviceable, however, in cases of malignant disease when the diseased tissue is

within reach. In such circumstances, however, the dose is enormous and the treatment necessitates the administration of chloroform.

Zinc and Copper Ions.

If the case is one of simple cervicitis then the zinc or copper electrode, covered with cotton wool, is inserted into the cavity of the cervix through the speculum, which is filled with 1% solution of bichloride of the metal employed.

When the endometrium is involved the zinc electrode should be introduced into the uterine cavity, and if insufficient action result, or the case be a very chronic one, the copper electrode must be used. It should be remembered, however, that the latter is more likely to cause pain and bleeding, as might be inferred from the meat experiment made. The zinc electrode, however, comes away easily and without the necessity for reversing the current.

In cases of prolonged uterine hemorrhage the copper will be found the more potent electrode, although, where the patient is very sensitive or there is any reason to fear pelvic cellulitis, it is well to avoid the use of the bare copper electrode. This, at least, has been my experience.

Either the zinc or the copper can be used with perfect safety in solution by means of the speculum in all cases of sepsis of the cervix. Before an electrode is introduced into the cavity of the uterus, however, the vagina and the cervix must have been rendered, as far as possible, aseptic by ionic treatment if necessary, after which with moderate care no harm can result from the intra-uterine application.

Description of Instruments.*

My first difficulty was with electrodes. I have had some made, however, which give me every satisfaction so far as convenience goes; and this is more important to the physician and to the patient than might be at first imagined. I have had a glass speculum made which suits much better than the ordinary one. It has openings in it near to the cervical end, thus partly distending and filling the vagina.

The holder of the electrode is kept in position by a bag of shot which rests on its broad end on the couch, the patient being on her back with a bed slipper under the pelvis. This holder, as you will observe, keeps the speculum in position, preventing it from slipping out or from dropping. Everything being fixed, the cervical or intra-uterine electrode can, after inserting it through the speculum, be kept in position with perfect ease and safety.

A spiral of copper wire or zinc, as the case may be, inserted into the speculum and fixed to it in the way shown in the plate, serves for vaginal applications, and also for vulvar by using it for the purpose of pressing against a pad of cotton wool soaked in the fluid and packed carefully against the open vulva.

Method of Application.

In order to avoid shock the current should be started and stopped slowly and steadily. I formerly applied the neutral electrode to the hypogastrium or to the sacral region, but this involved the undressing of the patient and prevented the current from being diffused equally throughout the cavity of the uterus, since it takes the most direct course to the neutral electrode. I find the hands a convenient place for the application of this electrode—a large clay one—because, being at a distance from the uterus, the current will more readily diffuse itself over the whole of the uterine wall. All rings must be removed whilst the current is flowing, otherwise the fingers may be burned beneath the rings.

No pain need accompany or follow the application when the method I now follow is adopted; but in some of my early cases considerable pain, and in two in-

*These instruments are described and illustrated in *The Lancet* of July 10, 1909, page 72.

stances some pelvic cellulitis, followed. No permanent injury, however, resulted.

I prefer to obtain the current from a battery instead of taking it by a shunt circuit off the electric main. The latter, in my opinion, is less safe. I show you a vulvo-vaginal electrode, which is relatively more troublesome to use; but in cases of combined vulvar, vaginal, and cervical sepsis it will give results well worth the trouble as a preliminary to deeper applications.

Clinical Results.

It would only weary you to give clinical details of the cases which I have successfully treated by this method. You can find fairly full details of these in *The Lancet* of July 10, 1909, and February 5, 1910. Suffice it to say that the cases have been as a rule obstinate, but not in the sense of being obscure, difficult to diagnose, or fit for treatment by the gynecological expert only. Far from being so, they were all such as the general practitioner is probably treating every day in his practice, and if he is satisfied with my results he can easily carry out the treatment for himself.

When the patient has given a fair chance to the treatment all the septic cases have benefited in a manner gratifyingly monotonous. The discharge, from being purulent or muco-purulent and copious, has become milky and of small amount, whilst the gaping os has become normal in size with the everted mucous membrane drawn in, and erosions have healed with a rapidity which was a revelation to me.

That the general health invariably improved coincidently with the cure of the septic condition and that the tongue, which in some cases had been foul for years owing to autotoxemia, should without any gastric treatment become clean and remain so is one of the evidences of this constitutional improvement. In two of my cases this toxemia was accountable for periodic attacks of severe gastric pain, due evidently to the effect of the toxemia on the solar plexus. In one of these cases, where the pain had lasted for twelve years, this was completely removed after a few intra-uterine applications of the copper electrode. This was several years ago, and there has been practically no return of the pain since.

In cases of long-continued retro-displacement of the uterus I find that, whereas under ordinary treatment a pessary has had to be worn for many years, this instrument may become unnecessary after a course of ionic medication, the uterus resuming its normal position in the pelvis and remaining there. Patients whom I used to treat periodically have been apparently perfectly and permanently cured. Though under my observation for years after, the pelvic condition has required no attention. This has been to me a new experience since I have adopted the ionic treatment, and so I invite you to try it. That it will give you satisfaction I have no manner of doubt.

POST-OPERATIVE ROENTGENIZATION IN CANCER.

FRANK E. PECKHAM, M. D., in the *Providence Medical Journal.*

The use of the Roentgen ray in the treatment of malignant disease has never been taken up by surgeons very generally, because they have so far been unable to see anything in it. Cases in which nodular recurrence has taken place and these same recurrences have been made to disappear by X-ray exposures, when such patient has called on the surgeon who did the operation, because he thought he would be glad to know of such work, the surgeon flatly disputed the fact that nodules had ever appeared. In other words, the attitude of the surgeon has been one of fixed unbelief, and today, with a very few exceptions, patients come for such treatment, not because they have been sent by the surgeon, but because they

have heard of some one else being benefited.

In consequence of this quite natural unbelief it is encouraging to see a long and carefully written editorial in the *Journal of the American Medical Association* on the above subject (January 21, 1911). Such a subject discussed by an editor of the *Journal of the American Medical Association* serves to give this whole matter a much better standing. In order to emphasize the importance of all this, I shall make quotations extensively, as my own experience for a number of years in this all-important work dictates.

Quotation: "Every radiotherapeutist who has attained sufficient knowledge and had sufficient experience to entitle him to the designation recommends that the X-ray be applied, *as a routine measure,* without waiting for recurrence to take place, in conjunction with *every operation* for the removal of cancer."

"The doubters of the curative powers of the X-ray are not found in the ranks of those who know the agent." "As a matter of fact, the average surgeon knows vastly less about the beneficent possibilities of this measure than does the roentgenologist or internist about those of ablative surgery."

"The physiologic therapeutist spends his life in a field which is practically unknown to the average surgeon."

The editor then groups the surgeons in three classes: (1) Those who think that a patient should not be roentgenized until a recurrence has manifested itself. This class he considers "almost hopeless as far as conversion is concerned."

(2) Those who object to the expense because they know that "many cases will be cured by extirpation and that there will be no recurrence." This class he considers entirely hopeless.

(3) Those who "would really like to know why their patients should be roentgenized unnecessarily." This class he considers as "being open to conviction."

(1) "The reason why roentgenization should not be delayed until recurrence has taken place is that by the time recurrence has manifested itself the malignant process will, in many cases, have progressed so far that neither X-ray nor anything else can reach it effectively. The most dangerous recurrences are internal: they frequently take place with terrifying promptness, and without giving any outward and visible sign of their presence until they are well developed. The first visible indication of recurrence may transpire months after the fatal internal lesion has insidiously and firmly established itself. Immediate, routine, post-operative roentgenization, when it is effective, eliminates this danger." "Immediate post-operative raying constitutes attack on the menacing factors when they are smallest and weakest and when, if recurrence is imminent, the resistive power of the healthy tissue surrounding these foci is at its best."

(2) Regarding the objection to the expense, the editor goes on to say that "the X-ray has demonstrated that it can prevent recurrence in some cases, and the ablative procedure has done the same. The X-ray has failed in some cases, and so has extirpation. Therefore, if it is justifiable to recommend the operation, it is also justifiable to recommend post-operative radiation."

(3) Concerning the claim that many patients are treated unnecessarily, the editor says, "It is never possible to determine which are going to need it previous to recurrence; hence, in order to be sure that all of those threatened receive its benefits, all patients must be rayed." Likewise, "We can not tell which patients will be radically cured by operation until time has demonstrated that recurrence does not obtain." As a matter of logic, the argument favors the routine post-operative application of the X-ray more than it does the routine adoption of extirpation, because unnecessary or unsuccessful roentgenization does no

harm, if skillfully applied, whereas unsuccessful extirpation increases the malignancy of the growth, and the last condition of the patient is usually worse than the first.

In cases "where the malignant process is so extensive that it can not be completely extirpated." "A lesion of this character offers no prospect whatever of recovery under ablative procedures alone, probably because the local and general toxemia induced by the breaking down of large cancerous masses by X-radiation is frequently profound enough to depress the patient's local and general resistive and recuperative powers seriously. Indeed, there can be little doubt that many patients have succumbed to such toxemia. And yet, up to very recently, the treatment of this class of cases has constituted about the whole extent of the field that the average surgeon has been willing to allow the roentgenotherapeutist. The dictum taught and written has been 'Use the X-ray in inoperable cases.' It is, indeed, a tremendous tribute to its actual power that it derived any credit at all in such cases. By first extirpating as extensively as possible, however, the amount of work to be demanded of the X-ray and the amount of contingent toxemia are tremendously lessened, and both measures are given an opportunity to do their utmost under the most favorable conditions obtainable in the given case."

These are only abstracts of an excellent editorial which every practitioner owes it to himself to read with great care. It is now a scientific fact that the X-ray has a profound effect upon malignant tissues, if properly applied, and every patient ought to be urged to make use of this modality as a routine treatment. A real complication of the X-ray treatment is the fact that some men who refer cases for radiation retain control as to how many treatments should be given and also when the patient should cease treatment. I think it is only fair that the man who has laboriously acquired the knowledge and skill by actual work in this field should be allowed to have complete control of the situation, for only under such conditions can the best result be obtained.

RESUSCITATION FROM ELECTRIC SHOCK.

The first meeting of the Commission on Resuscitation from Electric Shock was held in the board room of the National Electric Light Association, New York, on February 22. This commission was organized upon the initiative of the National Electric Light Association, and has for a purpose the study of electric shock and the preparation of a set of rules for first aid in case of electrical accident. The commission is composed of members of the American Medical Association, National Electric Light Association and American Institute of Electrical Engineers, as follows:

Nominated by the American Medical Association: Dr. W. B. Cannon, professor of physiology, Harvard University, chairman; Dr. George W. Crile, professor of surgery, Western Reserve University; Dr. Yandell Henderson, professor of physiology, Yale University; Dr. S. J. Meltzer, Rockefeller Institute for Medical Research, New York; Mr. W. D. Weaver, editor *Electrical World*, secretary. *Nominated by National Electric Light Association:* Dr. E. A. Spitzka, professor of general anatomy, Jefferson Medical College; Mr. W. C. L. Eglin, electrical engineer Philadelphia Electric Company. *Nominated by American Institute of Electrical Engineers:* Dr. Elihu Thomson, electrician, General Electric Company; Dr. A. E. Kennelly, professor of electrical engineering, Harvard University.

At the meeting in New York City the medical members of the commission unanimously advocated the Schaefer, or prone method, as the best means in the hands of laymen for maintaining respira-

tion in victims of electric shock, and the commission formally voted to recommend this method. A chart is now being prepared which will give details of first aid in cases of electric accidents and will describe fully the method of applying artificial respiration. This chart will be issued under the auspices of the National Electric Light Association.

HYPERTROPHY OF THE PROSTATE TREATED WITH ROENTGEN RAYS.

By Dr. J. Rudis-Jicinsky, Cedar Rapids, Ia.

Knowing that prostatic hypertrophy consists in an overgrowth of all the normal elements — fibrous, muscular and glandular, the first two predominating— I have exposed many cases of this sort to the X-ray with a result which was sometimes astonishing, the symptoms varying in every individual case. In the earlier stages where the patient complains of a pain in the back, having slight fever, due to mild uremia, or even where there were symptoms of polyuria with the advent of catarrh of the vesical neck and bladder, the pain was checked usually after the first sitting and the enlargement, which has the characteristic feature in the tendency to arrangement of the fibrous and muscular elements into distinct nodules of spherical form, decreased in about ten sittings.

In all these cases the positive diagnosis has to be made first, and having demonstrated prostatic enlargement and residual urine we should not jump to the conclusion that we have made a complete diagnosis, for other serious morbid conditions and malignant lesions may coexist and contribute largely to the patient's symptoms and yet be obscured by the prostatic enlargement. Here the examiner must proceed to detect or exclude; again, with the help of the X-ray if necessary, any degeneration of the bladder walls, prostatic cancer and tuberculosis, other tumors, vesical or renal calculus, and urethral stricture.

The X-ray treatment under proper conditions, especially with the knowledge of our tube (made especially for this purpose), apparatus and technic will always have the approval of everyone interested in the relief of suffering in cases of hypertrophy of the prostate, having in view a rational treatment consisting of the removal of the prostatic obstacle to urination and the restoration of the normal relations at the bladder neck without the knife, and still with good results.

In the few years gone by, we have found that the X-ray is not a cure for all diseases; that it has its good results in the therapy, as it had many failures. The failures, being due to zealots, who treated everything everywhere, without making the proper diagnosis; without the knowledge of the pathology of the respective lesions, using the rays as a leading fad, instead of an accessory to already known methods, and injuring the permanency of its hold on the really scientific opinion of a good and honest man. At the present time, however, the X-ray treatment is on a safer basis, and what it has lost through the desertion of the faddist, with their so-called "burns," etc., it has gained through the accession of many workers, who use the Roentgen rays as a means of therapy in suitable cases only, getting now far better results from their systematic and proper application.

Glancing over the pages of the research, experimentation, and investigation with the X-ray, the student is astonished at the rapid strides made, and the notable results. To get these results we have to remember that there is a difference in a Crooke's tube of high vacuum, medium and low vacuum, regulating or not, difference of action in the same tube at different times, and perhaps at the same time of exposure; and also a marked difference in action on the tissues, of the rays given off at different angles from the anodal disk. We know

that in a vacuum tube we have to consider closely the hemisphere of X-ray activity, and the dark hemisphere. Taken from the focus point in the middle of the anode, where the violet, triangular pencil or the cathode rays strike first during the action of a tube we got with an increase of the electromotive force from behind, another pencil of yellow-green color, of which the base shows on the glass wall of the bulb, showing us where to look for the best quality and quantity of rays of the X-ray order. The rays within the area of the middle of the hemisphere of X-ray activity have the most penetrating power, and are most active, producing in much shorter time an irritation, dermatitis, and subsequent necrobiosis, if the exposures are unnecessarily prolonged. The rays contained in the area on the side, or near the line of division of the two hemispheres, are less marked in action, are more stimulating than irritating, showing with a high tube we may get along just as well as with so many different tubes of different makes and of low vacuum. Certainly, we have to be careful, guided by experience in every case. (See author's article: "In the Hemisphere of X-Ray Activity," *New York Med. Journal,* May 23, 1903.)

L. J. P., age 62. Suffered with typhoid malaria for ten weeks in Dakota. Sent home; showed symptoms of uremia, had indigestion, dryness of the mouth, loss of appetite, nausea, headache and slight pain in the back, and slight fever. Polyuria (eight to ten pints daily), the urine showing reduced specific gravity, 1010-1017, and sometimes a trace of albumen. The case was diagnosed diabetes insipidus. Bladder symptoms pronounced later on; frequent calls to urinate felt by day as well as by night; normal sense of satisfaction after micturation was lacking; the urine became cloudy, full of deposits. Dull pain felt along the urethra in perineum and rectum. Constipation. Examination revealed hypertrophy of the prostate. The X-ray was applied with my special tube. Distance of the tube 12 inches; exposure, 15 minutes.

Patient was instructed in personal hygiene; and assimilation and excretion promoted. Good digestion; daily and easy defecation, using enemas; warm baths, and friction for the skin; warm clothing; plenty of food, sunlight, air and exercise. Good water (3 to 4 pints of warm water), later cold. No excesses allowed. Pain stopped after the first exposure to X-rays. Total number of exposures, 24. Patient now well for 2 years.

L. J., aged 49. Similar history and nearly the same symptoms. The pain in back more pronounced. Careful examination revealed extensive carcinoma at the neck of the bladder, besides the enlargement of the prostate. The lesion had developed within six months. The tumor bulged inward under the bladder. Under the X-ray treatment the bulk of the projecting inward tumor was reduced. Pain stopped. Subsequently radium was also employed in a specially made applicator for this purpose and allowed to remain in the urethra and against the lesion for three hours at a time. In two months radium was stopped, X-ray was given alone and the malignant condition has steadily improved. There was apparent arrest of the development of the growth, the patient after the lapse of three years feeling now well.

Twenty-four other cases were also relieved soon. In six cases of a chronic character, three of them with other malignant lesions behind, we failed altogether. Exposure took place through an opening in a sheet of lead. Later we used our special tube and results seemed to be better and more satisfactory, the lesions being attacked more thoroughly and improved more rapidly than before. Striking improvement in the prostate demonstrated itself in every suitable case, so to say.

COMMUNICATIONS.

NOTES AND QUERIES.

By J. A. BURNETT, M. D., Marble City, Okla.

Editor MEDICAL BRIEF:

THE statement has often been made that in twins of a different sex there are always two placentas, and twins of the same sex only one placenta. On January 4, 1912, I delivered Mrs. J. of twins, a boy born first, and a few minutes later a girl. There was only one placenta. Both cords were attached to it.

This was my second case of twins in my practice. On July 26, 1910, I delivered Mrs. B. of twin girls and there was only one placenta.

As a rule a physician has not many cases of twins in a lifetime practice, and I would like to know the observation of others as to whether there is one or two placentas, and as to the sex.

Dr. Frank A. Jones, in speaking of the action of digitalis on the heart, says: "As to the use of digitalis there is but one valve lesion on which it has any marked effect, and that is mitral insufficiency when failing compensation takes place."

It is much cheaper to keep powdered drugs than fluid extracts and tinctures. They can be mixed with confectioners' sugar and given in powder form or in hot water. The sugar aids in preserving them as well as to their palatibility. Confectioners' sugar is pure white granulated sugar, finely powdered, also known as xxxx powdered sugar.

The value of inhalations is a subject that is very much overlooked, and deserves more attention in respiratory diseases. Can any one tell what the inhaling preparations are made of that are used to relieve headache? Some of these proprietary preparations will relieve headache at once when inhaled.

There are many methods for producing hypnotic influence. Some have used revolving mirrors with good results and some report poor results. I am inclined to think that by turning the patient round in a rapid manner, as in a revolving chair or in a circle swing, and various other positions would greatly assist. Another good plan is to begin only when the patient has lost sleep and is very sleepy for natural sleep. Again by the use of various drugs. I would like to see reports on the various best methods of producing the hypnotic state. There in an article, "Treatment of Rheumatism by Injections of Magnesium Sulphate," by A. B. Jackson in *The Practitioner*, of London, January, 1912.

Will some one that has access to this publication abstract the article for us in such a manner that we will know just how to carry out the treatment as directed by Jackson?

Include the dose strength of the solution; where it is injected, and how often repeated. Editor, will you do this?

What are evident signs of insufficiency of the adrenal glands?

On page 592, *Journal A. M. A.*, August 12, 1911, I see mention of an article on "Tuberculosis Treated by Intravenous Injections of Ethereal Solution of Iodoform," by F. W. Dewar. Will some one who has access to Dewar's article abstract it in a practical manner so one could follow out the treatment if he desired?

RELIEF WANTED.

Editor MEDICAL BRIEF:

I have been a reader of THE MEDICAL BRIEF for years and often noticed that diseases were discussed and correct diagnosis and treatment were given. Now, at this time, Doctor, I myself am the subject. For nine months I have suf-

fered with ache and pain in the muscles of the legs and arms. At first, for three months, it was in the legs. They improved half, then it began in the arms. A sore, agonizing ache, day and night, and shooting neuralgic pains when moving them the least out of their natural motion. I am exhausted when I retire, and the same when I rise. Mark this: the joints never suffer; it skips every joint clear to the tips of the fingers. Heat does not relieve; am better in the cold. I have gone four months without any medicine whatever, trying to make a perfect life overcome it. But my life is trying. In any position or place it is almost unbearable. No swelling, no particular soreness when the muscles are kneaded or massaged, only the continual ache.

Am a practicing physician, age 72, a perfect picture of health, weigh 140 pounds. No one ever takes me for over 60 years. Every joint is as limber as of 20 years. Parents very robust and long-lived, 85 and 91 years. Habits good. Live the purest and best I can. Keep my own meat, chickens and "Jersey." Have the best filtered water. Retire at 10:00 p. m., and have never missed a full, wholesome meal during the whole time. In bed I can not get any rest or sleep unless I lie flat on the abdomen. Can not bear any other position, and even in that I only sleep from exhaustion. When first in bed am like an overtaxed man at hard labor. I find no one that attempts to tell me what is the cause, or suggests any form of treatment. No malarial troubles here; a bracing, healthy place; fruit in abundance. Queer to me that I am so hearty, such a robust, healthy look. Have a will to do and yet hampered by such suffering and apparently outside of any real vital organ.

It seems to me to be more of a neuralgic character, for, when worst, heat flashes through face and eyes, and I ask myself, "Do I need nerve tonic, sedative or systemic alterative?" In the first three months phosphates hurt me. Strychnine, only a whip at that time.

Tincture gelsemium, five drops every two hours gave me much relief in lower part of body, but now in the arms no decided relief.

What is it? What can I do?

JAMES P. HAWES,
Valois, Schuyler Co., N. Y.

PREVENTION OF POST-OPERATIVE PNEUMONIA.

There is a tendency at present to operate as much as possible under local anesthesia and to let the patients get up earlier, so as to avoid many of the common post-operative accidents. General anesthesia is, however, absolutely necessary in nervous individuals and children, and in larger abdominal operations where the necessary relaxation can not be assured in any other way. Otto Goldstein is of the firm opinion that many pneumonias could be prevented by a proper care of the mouth. This is necessary especially in old patients and where bronchitis is already present. The author finds that the best mouth-wash is perhydrol, diluted with thirty times its volume of water, thus equalling in strength a 1% solution of hydrogen peroxide. This will make a very strong disinfecting solution which also acts mechanically. The patients are instructed to use this mouth-wash four to six times a day before operations.

SEPTICEMIA—PYEMIA.

Bromini ..... 2 drachms.
Potassii bromidi (vel. iodidi). 2 drachms.
Aquæ dest ..... 1 pint.

Not to be inhaled. Keep in a glass-stoppered bottle. Apply to point of infections as cautery. Keep inflamed region swathed with weak solution night and day of various strengths ranging from ½ ounce to 1 pint to 2 pints. Same quantity of sodium bicarbonate added will be found cooling and advantageous.

THERAPEUTIC BRIEFS.

Laryngitis.—

Mentholis .....6 drachms.
Ol. eucalypti .....4 fl. drachms.
Ol. pini sylvestris.....4 fl. drachms.
Tr. benzoini comp.....4 fl. drachms.
Tr. tolutani .....4 fl. drachms.

Inhale from a steam-kettle or vaporizer, or evaporate in an iron spoon over a lamp, several times daily for 10 to 15 minutes each time.

Narcotism.—

Apomorphinæ hydrochloridi...2 grains.
Aquæ dest.....1 fl. ounce.

Inject 30 minims hypodermically as an emetic.

Atropinæ sulphatis ..... ⅛ grain.
Aquæ dest .....4 fl. drachms.

Inject 15 minims every hour until physiological effect.

Chordee.—

Camphoræ monobrom.....15 grains.
Ext. opii ..... 3 grains.
Ext. hyoscyami ..... ½ grain.

M. Div. in pil. No. 6.

Sig.: One at bedtime; repeat toward morning, if necessary.

Ext. opii .....6 grains.
Ext. hyoscyami .....4 grains.
Ol. theobrom .....1½ ounces.

M. Div. in suppos. No. 6.

Sig.: Introduce one into the rectum at bedtime; repeat during the night if necessary.

Alopecia.—

Resorcini albiss.....1 to 4 drachms.
Glycerini ..... ½ drachm.
Tinct. capsici...1 drachm to 1 ounce.
Tinct. cantharidis,
1 drachm to 1 ounce.
Aquæ cologniensis.....ad..8 fl. ounces.

Wash scalp once a day for men, at least once a week for women.

Trachoma.—

Cupri sulphatis .....8 grains.
Acidi salicylici.....8 grains.
Cocainæ hydrochloridi.....8 grains.
Lanum .....6 drachms.
Petrolati .....4 drachms.

Rub into the eyelids three times daily.

Earache.—

According to S. H. Snow, glycerin is superior to olive oil as a medium for ear application, being more penetrating and more easily washed out.

Mentholis .....20 grains.
Camphoræ .....20 grains.
Phenolis .....15 grains.
Glycerini ..... 1 ounce.

M. Sig.: Warm ten drops in a spoon and pour into ear.

Whooping Cough.—

The following prescription has been recommended for children between three and six years of age:

Codeinæ ..... 3 grains.
Bromurali .....30 grains.

M. ft. Pulv. No. 20.

Sig.: One powder three times a day.

Fissured Nipples.—

As a preventative the following may be used:

Tr. benzoini comp.....15 minims.
Ol. olivæ ..... 2 fl. drachms.
Lanum ..... 6 drachms.

M. Sig.: Apply on a piece of lint, after nursing, during first two or three weeks.

Chronic Rheumatism.—

J. Edwards uses the following external preparation in chronic rheumatism:

Ichthyolis ..... 1 drachm.
Adipis lanæ hydros..... 2 drachms.
Petrolati..ad ..... 1 ounce.

M. et ft. ung.

Smokers' Heart.—

Adonidini Merck ..... 2½ grains.
Ammonii carbon .....45 grains.
Camphoræ .....15 grains.

M. Div. in pulv. (in capsul. gelat.) No. 30.

Sig.: One three times daily.

BOOK REVIEWS.

THE PRACTITIONER'S VISITING LIST. 1912. Thirty patients a week. Philadelphia and New York: Lea and Febiger. Price $1.25.

These visiting lists are a necessity in every practitioner's working outfit, and it is merely a question of the comparative excellence and suitability of the various lists on the market. This little book of Lea and Febiger's will certainly compare favorably with any of them. In addition to a visiting record, a cash account, and a general memorandum, it contains an epitome of about all the emergency information that a physician is likely to want, including even an alphabetical therapeutic reminder. We can not refrain from making mention of the excellent work shown in the physical features of the book, the well-registered ruling, for instance, and the strong, handsome binding.

MEMORANDA OF POISONS.—By Thomas Hawkes Tanner, M. D., F. L. S. Eleventh revised edition. By Henry Leffmann, A. M., M. D., Professor of Chemistry, Woman's Medical College of Pennsylvania; Pathological Chemist, Jefferson Medical College Hospital. Philadelphia: P. Blakiston's Sons & Company. 1911. Price, 75 cents net.

Contains, within a very small compass (the book only measures some three by four inches), a great deal of information. Every member of the materia medica family that can or does cause death in overdoses is included in the list, and in a condensed, bulletin-like fashion, everything is told about each substance that one is likely to want to know. The size of the book is a desideratum, for it enables the practitioner to slip it into his pocket and carry it around with him. No man can keep all this sort of information in his head, ready for instant use; and so a little reference book that he can easily carry with him is a very handy and valuable thing, especially when it is as complete as this one is.

RETINOSCOPY.—By James Thorington, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmic Surgeon to the Presbyterian Hospital. Sixth edition, revised and enlarged. Sixty-one illustrations. Philadelphia: P. Blakiston's Sons & Company, 1911. Price, $1.25 net.

Dr. Thorington still continues to hold the first place among the writers of popular books on Refraction for the general practitioner. And deservedly so, for he is, in our opinion, the clearest and most practical writer on the subject this side of the Atlantic. A complete set of his three books, "Refraction and How to Refract," "Retinoscopy" and "The Ophthalmoscope and How to Use It," contain about all a practitioner of ordinary intelligence and training needs to enable him to carry out his own refraction work. And they are so simple and plainly written that he who runs may read. We only wish we could urge upon more physicians the importance (not to say the profit) of providing himself with a set of books like this, and the necessary paraphernalia, and following up this work. We are urging it continually in our reading pages and we reiterate our urging here. This is a good time to begin.

ANATOMY.—A Manual for Students and Practitioners.—By John Forsyth Little, M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College. Philadelphia. Second edition, revised and enlarged. Illustrated with seventy-five engravings. Philadelphia and New York: Lea & Febiger.

This book also belongs to a series of the epitome type. Anatomy is a pretty large subject, and one which inevitably

escapes the memory of the practitioner who is not, by his practice, kept in constant contact with applied anatomy. Hence a reminder of the essential and salient points, especially of surgical anatomy, is rather a welcome aid to the average physician. It must be said that Dr. Little's book displays considerable judgment and discrimination in the selection and arrangement of his material. He has succeeded in picking out and serving up the really practical and helpful things. The second edition is brought well up to date, one of the most important changes being that which relates to the cerebro-spinal axis, which is, as the writer says, "described with sufficient detail of the most important masses entering into its intricate formation to enable the reader to grasp its structure with facility." This, of itself, is no slight task.

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A COMPEND OF GENITO-URINARY DISEASES AND SYPHILIS.—Including Their Surgery and Treatment.—By Chas. S. Hirsch, M. D., Formerly Assistant in the Genito-Urinary Surgical Department, Jefferson Medical College, Philadelphia; Consulting Physician, Social Service Hospital and Juvenile Protective Association, Philadelphia. Second edition. With seventy-four illustrations. Philadelphia: P. Blakiston's Sons & Company. 1912. Price, $1.00 net.

This little book belongs to the Blakiston Quiz Compend series, of whose merits and demerits we have frequently spoken in these pages. The only possible legitimate value we can accord them is for purposes of review by the student or practitioner in subjects with which he has already made himself more or less familiar through the larger text books. When used in this way by the student they should be used under the supervision of a teacher, merely as a guide. Thus employed, we believe they fill a useful place in the minor literature of medicine. This particular compend is a fairly good epitome of the subject of which it treats. We can not find that it makes any mention of the vaccine treatment of urethritis. Cystoscopy is given good attention; so also is the Wassermann test and the "606" treatment in syphilis. Altogether, we can recommend it as a practical and well-digested presentation of modern urology and syphilology, within the limitations indicated.

♣ ♣ ♣

TEXT BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY.—By John J. Reese, M. D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; Late President of the Medical Jurisprudence Society of Philadelphia. Eighth edition. Revised by D. J. McCarthy, A. B., M. D., Professor Medical Jurisprudence in the University of Pennsylvania. Philadelphia: P. Blakiston's Sons & Company. 1911. Price, $3.00 net.

We confess that we have not yet seen the modern book on medical jurisprudence which meets our ideas of what such a book should be. Nobody seems to be able to break away from the old rut. Everyone rehashes the same old statements and the same old instances. Yet we all know that jurisprudence of any kind—medical as well as others—must be undergoing considerable evolution, which somehow or other does not seem to find its way into the text books. For one thing, the current text books seem to us to give entirely too much space and attention to those phases of legal medicine which rarely concern the general practitioner, and almost to ignore the smaller, every-day aspects of it which he is continually encountering. Again, they treat the whole subject altogether too much from the side of the physician, and too little from the side of the law and the general public, and so miss the very reason of their existence. Of its class, the book under review is a reliable, well-established standard, as the number of its edition testifies. We would recommend, however, that in the next revision the reviser break away a little from the old landmarks and modernize the book.

NOTES AND MISCELLANY.

PAPYRUS EBERS.

SOME time ago announcement was made through the pages of this journal that Dr. Carl H. von Klein had completed an English translation of the Papyrus Ebers, and that its publication in book form depended upon an advance subscription list of one thousand names. As a result of that announcement and the interest shown by Dr. von Klein's friends, six hundred subscriptions have been secured. The enterprise drags at this point and something must be done to arouse the profession to the importance of preserving this valuable manuscript. Four hundred additional subscriptions must be secured.

The editor has had an opportunity to examine the elaborate manuscript, which is preserved with the greatest care and affection by the venerable translator, and one realizes how important it is that the author of the translation should see the ideal work of his life through the press. It is a question, in fact, whether the translation will not be lost to science just as Ebers' work was lost to us, by the author taking it with him to his bier, if he is not spared to finish the work of publication.

Dr. von Klein has spent twenty years of odd moments of a busy, useful life, mostly devoted to the literature of our profession, on this work of love, and it will be regrettable if it is now lost when so little will not only preserve it to us, the profession, but give its faithful author the satisfaction of seeing it in print.

The book will consist of 650 pages, 7x10 inches, in two colors (red and black) similar to the original, with six plates, bound in one volume. Subscriptions may be sent directly to Dr. Carl H. von Klein, Medical Department, John Crerar Library, Chicago, Ill. Dr. von Klein will publish this volume personally, and it will be sold only on subscription.

INTRA-VENOUS MEDICATION.

We desire to call the attention of our readers to a small pamphlet entitled, "Intra-Venous Medication," issued by the William Bannerman Company, manufacturing chemists, 64 Randolph street, Chicago, Ill. In their introduction it is noted that "the old method of administering drugs by way of digestive tract has been largely responsible for the present-day prevalence of 'Drug Nihilism.' The uncertain action of a drug, due to changes that may take place in an abnormal digestive system, is a disadvantage. Leaders in medicine have devoted much time and effort in striving to overcome those obstacles in different ways, as, for example, different and more easily assimilated forms of the drug. Hypodermic administration, inunction, intramuscular injection, etc., have been suggested with far from perfect success. Now, however, the ideal method, intravenous injection, has been demonstrated both feasible and free from danger. The same old, tried drugs are used, but are treated before being compounded. This enables the doctor to inject them directly into the blood, thus getting the direct action required and removing all possibility of chance effects due to outside circumstances."

This little booklet was written with the idea of placing before the profession something of the possibilities of the intra-venous method as worked out from a carefully calculated series of experiments on the lower animals first, and then from conclusions drawn from the treatment of a large number of diseases in the

human. The booklet deals with, in a brief, conservative, yet interesting manner, the essential features of the physiological action of the known ingredients and therapeutic scope of Bannerman's Intra-Venous Solution.

"It is not claimed that this solution is a specific, not that it has a selective action on any germ or class of germs. Its effectiveness lies in its capacity to increase absorption and thus aid in fortifying the natural resisting powers of the body. Extensive clinical research, both in laboratory and private practice, has clearly demonstrated that the administration of Bannerman's Intra-Venous Solution positively increases the number of red blood cells. The augmentation of the number of cells naturally raises the resistance, and thus aids nature in the fight that is constantly carried on against diseased conditions. For this reason Bannerman's Intra-Venous Solution has been most successfully employed in tuberculosis, anemia, chlorosis, and a number of other diseases where there is lowered resistance. The fact that this company have blood reports, which actually show that one injection to one patient increased the red cells 1,400,000 in eleven days, is conclusive evidence of the value of this line of treatment."

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NEUROTIC ANOREXIA.

While loss of appetite and nausea are usually symptoms of a host of diverse pathological conditions, they sometimes constitute a disease in themselves—a kind of neurosis. In these cases the physician will find Gray's Glycerine Tonic Comp. of almost specific value for restoring the impaired appetite. It is not only agreeable to take, but produces its benefits at once in such a natural way that before the patient realizes it, the normal amount of food is being taken. Its efficacy in these neurotic cases makes Gray's Glycerine Tonic Comp. exceedingly useful in relieving the severe nausea that often occur in early pregnancy.

NIGHT BLINDNESS IN CHILDREN.

Stephenson, in the *British Journal of Children's Diseases,* believes that this condition is not very uncommon in the lower strata of society, especially in orphanages. It prevails in the summer and autumn, and is seldom seen during the winter months. The symptom complex, in its fully developed form, includes (1) changes in the ocular conjunctiva and (2) night blindness.

The conjunctival changes are as a rule limited to the interpalpebral zone, and usually affects both eyes. More or less triangular areas, glistening, dry-looking plaques are seen on the conjunctiva. This foam-like material can be easily wiped away and will then return in from 24 to 36 hours. The condition is commonly named "epithelial xerosis" and is caused by xerosis bacillus.

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MEDICAL SKEPTICISM.

"It is pretty hard to teach an old dog new tricks.'"

Doctors are the most skeptical of human beings. You may confront them with overwhelming evidence of the value of any method or remedy and they will either say nothing or, all too frequently, say something derogatory.

It is right that those dealing with human life should be careful, but it would seem that too much skepticism is liable to defraud the medical profession of much good which might otherwise come to them.

Harvey's "theory" regarding the circulation of the blood was laughed at for years.

Pasteur at first met with opposition of the most pronounced type.

It took Laveran over fifteen years to get his ideas regarding the transmission of malaria accepted by the medical profession.

Bier, notwithstanding his high official position as physician to the Emperor of Germany, was called a dreamer when he

first advocated his theories of hyperemia. These "theories" now have been demonstrated over and over again and they no longer are an experiment.

Bier's Erectruss is an application of this principle to cases of impotency that every wide-awake physician should get acquainted with. See the ad of Huston Bros., page 2.

♣ ♣ ♣

THE PROGRESS OF OZONE THERAPY.

There is no doubt at all that the use of ozone in therapeutics is of definite value. The reports of hundreds of physicians in thousands of cases show conclusively that ozone is an oxydizing agent of value, and that its use as a means to increase under-oxydization and raise the bodily resistance is of value. The invention of Dr. W. D. Neel, of Chicago, of a machine whereby the ozone is rendered non-irritating, and, combined with terpene oils, has made Oxyoline a possibility. Literature regarding this subject, together with *The Oxyoline Bulletin* (a bi-monthly journal devoted especially to this subject) will be sent to interested readers addressing, The Neel-Armstrong Company, Akron, Ohio.

♣ ♣ ♣

MORPHINISM.

Bartlett's monograph on "Morphinism, Its Rational Treatment and the Mental Attitude of the Medical Profession in Relation to this Disease." Just off the press, and will be sent free to practicing physicians. Address C. H. Bartlett, 612 Princess Building, St. Louis, Mo.

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THE TREATMENT OF IMPOTENCE.

Every physician is bothered with cases of this unfortunate condition, which usually he can not treat. They go from one doctor to another, always unhappy, and always saying nasty things about the futile efforts of the doctor to help them. It is true that impotence is a difficult disease to handle, but those physicians who have found out the value of Suppos. Prostans meet these cases with much more pleasure than formerly, for, while the results are not specific in every case, the majority are very much benefited by the use of this simple procedure. Secure the booklet, "Successful Prostatic Therapy," in which the philosophy of this method of treatment is described. Address, Regent Drug Co., Detroit, Mich.

♣ ♣ ♣

A CLINICAL STUDY IN THIOCOL.

Horace G. Cole, in the *Practitioner*, November, 1911, gives his experience, from a clinical standpoint, of 38 cases of pulmonary tuberculosis treated with thiocol. In twenty cases thiocol was employed, and of these, fifteen were considerably improved, three were relieved, and two were unrelieved. Thiocol possesses all the food properties of creosote and is for the most part without the evil ones. In general, it may be said that during, and as a result of, its administration a healing process takes place in the lung tissue, leading to diminution in the frequency of the cough, and in the length of each paroxysm, loosening and lessening the expectoration. The night sweats always rapidly disappear under its use.

The drug is practically odorless and tasteless; it is constant in its composition, and it has never, in the author's experience, produced dyspepsia. It is non-toxic, and does not depress like creosote. The best dose is five grains thrice daily. It can be given in the form of tablets or in a mixture. In the latter it may be prescribed with orange or lemon syrup and it may be prescribed with other drugs. Diarrhea and a transient rash may occur as complications. Among the other conditions in which it may be used are hospital sore throat, whooping cough, emphysema, chronic bronchitis and asthma. With the exception of the whooping cough cases, distinct benefit was noted after its exhibition.

THE SUPERIORITY OF COD LIVER OIL IN PALATABLE FORM.

Whilst none questions the nutritional and therapeutic properties of cod liver oil, yet what avails it when its administration provokes gastric disturbance? If the gastric function be interfered with by the oil, it were better not to give it. Chemists long ago began endeavors to overcome the undesirable features of the oil, and how well they have succeeded is shown in that most palatable, and yet efficient product, Cord. Ext. Ol. Morrhuæ Comp. (Hagee), which, while possessing all of the food and medicinal virtues of the plain oil, is agreeable to the most exacting stomachs, even when continued over long periods of time. Cord Ext. Ol. Morrhuæ Comp. (Hagee) as a reconstructive will prove highly serviceable in many debilitated conditions, in which it is indicated, and the physician ordering it will be gratified at the results produced.

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The Medical Brief

ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG, PUBLISHER T. G. ATKINSON, M. D., EDITOR

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The Medical Brief

A Monthly Journal of Practical Medicine.

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EDITORIALS.

REFRACTION BY THE GENERAL PRACTITIONER.

IT IS a great pity that this class of work, which, of all the various branches of medicine, is the most exact in its processes, and for a moderate amount of intelligence and care yields the most satisfying results to both physician and patient, should have been so wofully neglected, if not altogether ignored, by the general practitioner. It has, unfortunately, been left almost altogether to the eye specialist; yet everyone with the slightest appreciation of the wide prevalence of errors of refraction must know that these specialists can not possibly meet the demands of the public for the correction of refractional errors. There is no good reason, except that of an inexcusable "rut" into which the medical man has fallen, why the general practitioner should not be doing this work, and doing it well. Everything else being equal, he is the proper and logical person to do it.

So far as the practitioner himself is concerned, perhaps one of the chief reasons for his attitude toward the subject is the lamentable lack of attention which is given to it in the curriculum of the medical schools of the country. Training in refraction has been left almost entirely to the post-graduate schools, to which a medical graduate is supposed to go if he wishes to adopt a specialty in eye diseases, under which heading the work of refraction is classed. Hence the medical student, accepting this view of the matter, and assuming that refraction is not a proper subject for the general practitioner, has fallen into the lax attitude of his school, and been content to pass it by with the merest perfunctory attention. And so, the result has been that medical graduates have been turned out of the colleges into general practice with absolutely no working knowledge of refraction whatever.

We repeat, this state of affairs is a great pity. Without going into the vexed question of whether, from a technical and academic point of view, the correction of refractional errors is an integral part of the practice of medicine, the broad fact stands unquestioned that it constitutes a factor in the relief of physical disability, and this brings it indubitably within the legitimate sphere of the physician's office. Of all the disabilities to which human flesh is heir, none, we venture to say, is more widespread, among all classes of people, than these same errors of refraction. Rich and poor, old and young, big and little, strong and weak, are all alike subject to these annoying and often painful conditions of vision. So large, indeed, is the field that, as we have already intimated, the comparatively small ranks of the eye specialist are totally inadequate to cope with the situation. Someone must reinforce the specialists in this work, and unless it is to go completely over to the optometrists, it behooves the medical profession, both in and out of the colleges, to adopt some active measures for maintaining its logical supremacy in this direction.

The work of refraction is not specially difficult or complex. Any intelligent medical man, with his previous scientific training, can, with a little application, acquire a sufficient working knowledge of the subject, to which his personal experience will add all that is necessary. It will, as we have more than once asserted, pay the average practitioner and give him a wider range of usefulness than the same amount of time and study given, say, to major surgery. Few general practitioners in these days have much opportunity for the performance of major surgery, and it is questionable whether it be advisable for the general practitioner to undertake it, in view of the risks attending it and the superior facilities that pertain to the modern hospital and its experts. But cases of refraction are, as we have said, exceedingly numerous; they can always be worked out with satisfaction and correctness; and they bring a fee which, for the amount of labor and risk involved, is usually equal to the obstetric fee of the locality in which the physician resides.

It is because we realize the importance of this matter that we conduct in this journal, from month to month, a department devoted to the problems of refraction, by means of which we hope at the same time to promote an interest among our readers in this kind of work, and to render them practical assistance in carrying it out. We earnestly urge our readers to take the matter up for themselves, and to get out of it, both for themselves and for their clients, all there is in it. There are, scattered throughout the country, a few good schools of refraction, where the subject is taught, both in conjunction with diseases of the eye and also as an independent subject, at a moderate expense. If any of our readers are contemplating the expenditure of a little time and money during the coming summer in a post-graduate course, we assure them that they could not do better (assuming that they are not already proficient in the subject) than to direct this expenditure toward the acquirement of a working knowledge of refraction by an attendance at one or other of these schools. We believe it will prove an excellent investment from every point of view.

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MAKING A PROGNOSIS.

EVERY practitioner fights shy of making a prognosis. All the text-books, except in the case of the two extremes of conditions—those mild diseases which call for no prognosis and those helplessly fatal ones in which a prognosis is superfluous—sidestep the situation with the noncommittal formula, "prognosis should be guarded." And, indeed, such an attitude has in it a good deal of solid wisdom. As Byron Robinson used to say, "the physician has enough to do diagnosing and treating a disease without taking upon himself the prognosis—we are physicians, not prophets." Even the most promising cases may, and often do, assume unexpected and unforseeable aspects which put to naught the prognostications of the most conservative and skillful, and render it both unwise and unscientific to make confident predictions about the outcome.

There is, however, another side to the matter. A patient who places himself unreservedly in the hands of his medical adviser, not only for counsel, but also for treatment, unquestionably has a right to the expression of at least a definite opinion as to the result of that treatment, and the prospects of recovery, just as the client who commits his case to an attorney has the right to demand whether or not he has a good case. Every intelligent client knows, of course, and if he does not he should be reminded, that the ways of courts and especially of juries, are past

finding out; that no advocate can control them; and that, in spite of the favorable appearance of the data and the evidence, the case may, after all, go against him So also may the intelligent patient be supposed to recognize, and if he be not sufficiently intelligent to realize it he should have it impressed upon him, that even the mildest of diseases may take a turn for the worst, or unforeseen circumstances may transpire which may bear the matter beyond the control of medical skill and resource. But, with this reservation, a patient is clearly entitled, with the rest of the service that he purchases, to an expert opinion from the practitioner upon the probabilities as to the outcome of his disease.

It must be borne in mind that, just as the patient and his friends know nothing about the pathology and treatment of the disorder, and call in the physician because it is assumed that he knows its nature and can undertake its cure, so the patient and his friends are helplessly ignorant concerning the prospects of the case, and are compelled and permitted to look to the doctor's superior knowledge to form a judgment on this point also. Hence, in spite of Byron Robinson's epigrammatic dictum about being physicians and not prophets, it is a part of the physician's office to prognosticate, and his ability to do so with reasonable certitude makes up a part of his claim to expert knowledge of the nature and behavior of disease for which he is paid a fee and of which the patient desires to avail himself.

It is quite true that, from one point of view, the more experience the doctor has had the less cocksure he feels about predicting the outcome of this or that disease. As Maurice Richardson once pointed out, experience operates upon the intelligent and sensitive man as a sort of check to his momentum, and if such a man lived long enough he would eventually reach a point where he would fear to initiate any course of action because of his accumulated realization of the possibilities of failure. But, on the other hand, this same accumulation of experience, if properly evaluated, serves as a pretty trustworthy set of data on which to base a reasonable prognosis. And such experience may be viewed in two distinct aspects, namely, collective and individual. First, there is the collective experience of the medical profession at large, assembled and recorded in the literature of medicine, which, in these latter days, is at the command of practically every practitioner who desires to avail himself of it, and which may be summed up under the heading of the data of statistics. If he has no other basis for making a prognosis, one can at least examine the testimony of statistics in the disease under consideration, and ascertain the percentage of recoveries made under the concensus of experience and treatment.

To this general data may be added the personal experience of the individual practitioner himself in his dealings with the disease in question, which will modify the conclusion drawn from the more general data either in favor of or against the favorable outcome of the case. This class of experiential data will, of course, be more or less valuable according to the shortness or length of the physician's practice, and the number of cases of the kind he has encountered. These two sets of data, considered in conjunction with each other, will furnish a fairly trustworthy basis for a prognosis which shall approach something like accuracy. And it is, as we believe, the duty of every physician to undertake the responsibility of a reasonable prognosis when called upon to do so. No ordinary patient is unreasonable about the matter. No infallible predictions are required of the doctor. But there is neither sense nor reason in the physician declining to express a prognosis at all because he can not exempt himself from infallibility.

HEREDITY AS A FACTOR IN DISEASE.

THERE is, in these modern days, among a considerable contingent of the medical profession, especially in those branches of medicine which concern themselves with hygiene and preventive medicine, what we regard as a rather loose and reckless optimism which tends to discredit the influence of heredity in the etiology of disease, especially of certain diseases which were formerly regarded as entirely hereditary in origin. It is the fashion, nowadays, to pooh-pooh the hereditary element in the origin of such diseases as tuberculosis, cancer, insanity, and the like, all with a confidence and a positivism which, as we have intimated, is utterly without warrant in the real status of scientific knowledge upon the subject of heredity.

It is significant that this somewhat premature optimism has for the most part had its impetus from men who deal with the various forms of the disease from a more or less unpractical standpoint; from the laboratory man who isolates the germ and is prone to imagine that he can therefore isolate the whole disease-complex; from the sanitary expert who quarantines and disinfects the patient, and is therefore apt to believe that he can segregate racial factors; and from the student of faulty logical faculties, who, finding that certain diseases are not, as was formerly taught, wholly hereditary, jumps to the extreme conclusion that they are wholly acquired.

The practitioner, the man who comes into actual practical relations with disease, knows only too well that in spite of the over-confident teachings of this new school, to which if he demur he is subjected to the taunt of being old-fashioned, heredity does still continue to play a very real rôle in the etiology of tuberculosis, cancer and insanity. Indeed, the practitioner is not the only one who knows it. The American Fraternity of Insurance Companies, through its committee, which of all investigating bodies may be relied upon to conduct their inquiries from a strictly practical and common-sense standpoint, still attributes to heredity the preponderating influence in the etiology of both cancer and insanity. It declares in its report that "the weight of evidence is in favor of a more marked hereditary influence. Many of the statistics that have been adduced in support of the opposing argument have been founded on records which are notoriously unreliable. Few practicing physicians could be found who would doubt the transmissibility of, and the inherited tendency to, this disease (cancer)." And upon the subject of insanity the committee is even more uncompromising. It declares that "insanity is doubtless hereditary in a large percentage of cases, and the inheritance of insanity or its alternative morbid states is so well attested as to require no extended statement."

As we have said, there is no body of investigators who could be depended upon to approach the subject from so hard and plain a viewpoint as the insurance companies. With them it is not a matter of scientific enthusiasm, or biologic theory, or individual or class hobby, but of hard-pan facts for economic working purposes. And, while everyone is cheerfully prepared to concede that in times past we have made too much of heredity, magnifying it into an innervating and paralyzing bogy, yet the cold, practical significance of such reports as these should at least give us pause in our over-zealous discounting of the hereditary factor altogether.

Intravenous Treatment of Anemia.

By JAMES C. Ross, M. D., Colorado Springs.

THE old objections to intra-venous medication are no longer valid. Neither patient nor practitioner need hesitate to employ or submit to this method of treatment. The only question left to consider is when and where the intra-venous route has any advantage over the prima via. As a general proposition, it may be said that there is always a marked advantage in introducing medication as directly and promptly and economically as possible to the tissue or organ which it is destined to influence. Hence the medicines to which this mode of administration is most adapted are those which are intended to act directly upon the blood. Dr. Ross has here given us some most interesting and suggestive reports upon a new and direct method of influencing the blood in anemia.

I beg herewith to submit, for the consideration of the profession, a brief report of work I have been doing for the past five years in treating anemia intravenously. I have proceeded on the theory that a probable exciting or predisposing cause of tuberculosis, Bright's disease, diabetes, functional nervous troubles, gastro-intestinal fermentation, organic disturbances, and similar maladies, is found in an impoverished blood, in one or more of the cell salts, whereby the normal chemical balance is lost. It is elementary that this proper balance must be maintained to secure normal functional processes. These salts consist of oxygen, chlorine, potassium, soda, iron, lime, carbon, etc., and have a definite proportional relationship. When deranged, the chemical reactions are disturbed and health becomes more or less impaired.

With this principle fixed in mind, I proceeded to ascertain, by actual blood tests, the status of the blood in these several ailments. I examined very many typical cases in different degrees of advancement, and in every instance I found an unbalanced relationship of these salts. All of the tests showed an impoverishment of oxygen, a diminishing chlorine, a reduction in the number of red cells, etc.

I then tried to establish normal balance by the introduction of oxygen gas, ozone and the ozonized terpenes by inhalation and by absorption through the bowels, supplemented by a diet of mixed vegetable juices, and administering iron, strychnine, arsenic, tuberculin and the autogenous vaccines, but I found I did not change the chemistry or character of the blood, and I soon gave this idea up. I next undertook to change the chemistry of the blood by the introduction into the blood, intravenously, of a product consisting of these salts in solution in the approximate proportion in which they exist in normal blood. In this endeavor I have been very successful. In many instances I have brought the blood to normal in five treatments and have never failed to accomplish it in thirty treatments.

But restoring the blood to normal has not always meant the establishment of normal conditions in the organism. Secondary lesions or anemia frequently appear, such as mucous colitis, gastro-intestinal fermentation, cystitis, prostatitis, fistulæ, abscesses, neoplasm, local lesions of consumption, etc. These require additional and direct treatment. Where the local lesion is accessible, I have found no better results can be obtained than by the application of these

salts directly to the affected parts. In other instances, I have resorted to surgery and the use of the autogenous vaccines. In consumption, for instance, I have been surprised at how quickly conditions have cleared up in using the autogenous vaccines after the blood has been restored to normal by means of the tissue salts.

Underlying my endeavors along this line is my conviction *that normal blood is the strongest corrective agency possible.* During this period I have treated tuberculosis, simple anemia, profound anemia, pernicious anemia, Bright's disease, diabetes, gastro-intestinal fermentation, many kinds of functional nervous troubles, and the record of these cases shows so high a degree of efficiency that it tends to verify the correctness of my theory.

I have taken from the records a few typical cases which I append hereto. I am much gratified with the results and I commend them to the reader's serious consideration.

Patient, Miss R. Diagnosis—Simple anemia. History—For some time patient had complained of sleeplessness, disturbed digestion, cold hands and feet, constipation, active kidneys and a tendency to weakness upon slight physical exercise. At time of examination the patient's condition was about the same as it had been for some years.

Gave her six intravenous treatments within a period of six weeks. All of said symptoms disappeared with the exception of cold hands and feet, which maintained for the better part of a year but finally disappeared.

The following shows the condition of the blood at the beginning and at end of her treatments:

Blood Test	First	Last
Specific gravity.....	1056	1059
Hemoglobin (Sahli)..	80%	96%
Red cells.....	4263000	4432000
White cells.....	7230	7400
Oxygen shortage.....	2956 grs.	Nil.

Patient, Dr. M. Diagnosis—Profound anemia. History—The patient is sixty-five years old and in good flesh. For several years previous patient complained of weakness, muscular pains and spasms in his legs, which became more frequent and severe. At time of examination he was confined to his bed most of the time.

Gave him fourteen intravenous treatments. From the very start he gained in strength and the muscular pains and spasms lessened until finally at the time of his discharge they entirely disappeared and his strength was fully restored.

The following shows the condition of the blood at the beginning and at the end of his treatments:

Blood Test	First	Last
Specific gravity.....	1040	1060
Hemoglobin (Sahli)..	40%	90%
Red cells.....	3921000	4763000
White cells.....	6754	7320
Oxygen shortage.....	14642 grs.	Nil.

Patient, Mrs. W. Diagnosis—Profound anemia. History — About ten years previous, patient developed physical weakness, headache, gastro-intestinal fermentation and a tendency to sleep too much. As time passed these symptoms manifested themselves more frequently and with greater severity. The weakness increased and the tendency to sleep more pronounced. At time of examination patient was having frequent fainting spells.

Gave her five intravenous treatments during the first month. Patient found relief after second treatment. Headache diminished in severity and frequency, strength improved so that mountain climbing was possible before the end of the month. The patient at this time returned home for a period of five months, after which treatments were resumed. After twelve more treatments patient was discharged cured. Two years have passed and I am informed that while the patient is strong and healthy she will occasionally have a headache.

The following shows the condition of the blood at the beginning and at the end of her treatments:

Blood Test	First	Last
Specific gravity.....	1048	1059
Hemoglobin (Sahli)..	60%	94%
Red cells.....4263000		4500000
White cells.....	7200	7000
Oxygen shortage.....	5482 grs.	Nil.

Patient, Mrs. B. Diagnosis — Profound anemia. History — About five years previous patient developed physical weakness with occasional fainting spells. Her weakness progressed and her fainting became more frequent and severe. At the time of examination she had become extremely weak and required assistance to move about. She was then fainting from ten to fifteen times daily.

Gave her nineteen intravenous treatments. After her third treatment her fainting ceased. She grew gradually stronger, gaining in weight each day. On the day of her discharge I considered her entirely recovered.

The following shows the condition of *the blood* at the beginning and at the *end of* her treatments:

Blood Test	First	Last
Specific gravity.....	1044	1058
Hemoglobin (Sahli)..	45%	90%
Red cells.....3940000		4346000
White cells.....	6325	7250
Oxygen shortage.....	6540 grs.	Nil.

Patient, Miss M. Diagnosis—Profound anemia. History—About three years previous patient developed physical and mental weakness, with occasional attacks of melancholia. Her physical and mental weakness progressed and her attacks of melancholia became more frequent. At time of examination her physical weakness and mental derangement were extreme and the patient was kept under close observation night and day.

Gave her twenty-four intravenous treatments. Physical and mental conditions began to improve after the fifth treatment. She was able to come to the office unattended after the tenth treatment. Was apparently restored to normal physical and mental health at the twentieth treatment. Patient was discharged cured one month later.

The following shows the condition of the blood at the beginning and the end of her treatments:

Blood Test	First	Last
Specific gravity.....	1040	1059
Hemoglobin (Sahli)..	40%	90%
Red cells.....4263000		4647000
White cells.....	6530	7200
Oxygen shortage.....	5820 grs.	Nil.

Patient, Mr. F. Diagnosis—Pernicious anemia. History — About two years previous patient began to present evidence of blood impoverishment and the usual symptoms, so well known to the profession, were complained of. At time of examination he had become extremely weak and required assistance to move about. Dropsical conditions were present to a marked degree. Color was a greenish yellow. Gastro-intestinal fermentation with uncontrollable diarrhea existed. Emaciation was extreme.

Gave thirty intravenous treatments. Patient did not show much improvement until seventeen treatments had been given. From this on the patient grew steadily better. The color of health returned to the skin, the gastro-intestinal trouble disappeared, as well as the dropsy, and when discharged he had gained twenty pounds in weight, had fully regained his strength, and looked the picture of health.

The following shows the conditions of the blood at the beginning and at the end of his treatments:

Blood Test	First	Last
Specific gravity.....	1042	1059
Hemoglobin (Sahli)..	45%	90%
Red cells.....	800000	4500000
White cells.....	4000	6500
Oxygen shortage.....	6655 grs.	Nil.

Patient, Mr. C. Diagnosis — Consumption. History—About six months previous patient developed a cough, later a little expectoration and a slight elevation of temperature in the afternoon. Patient grew weak and emaciated. At time of examination patient was suffering from chills, fever and

sweat, cough and expectoration, weakness and emaciation.

Gave patient fifteen intravenous treatments. Chills, fever and sweat disappeared almost at once. Patient steadily grew in strength and weight. When discharged at the end of four months the cough and expectoration also had ceased and I considered him fully recovered.

The patient then returned to Cuba, since which time I have had no word from him.

The following shows the condition of the blood at the beginning and at the end of his treatments; also, the low point reached by the density and color index:

Blood Test	First	Low	Last
Specific gravity.....	1064	1055	1060
Hemoglobin (Sahli).	120%	75%	92%
Red cells.....4325000			4973000
White cells.....	18000		8000
Oxygen shortage....	3325 grs.		Nil.

Patient, Mrs. G. Diagnosis — Consumption. History—Patient complained of ill-health for many years. Finally, a cough developed; later, a little expectoration and afternoon fever. At the time of examination patient was losing flesh, the cough and expectoration had become severe, and the afternoon fever had reached 103° F.

Gave her sixteen intravenous treatments; also, a course of autogenous vaccines. Improvement was noticeable after first treatment. No fever after tenth treatment. Grew stronger and increased in weight from the beginning. At time of her discharge she still had a little morning expectoration, but she writes, after two years, that she is enjoying better health than at any time in the last twenty years.

The following shows the condition of the blood at the beginning and at the end of her treatments:

Blood Test	First	Last
Specific gravity.....	1054	1059
Hemoglobin (Sahli)..	70%	92%
Red cells.....3984000		4375000
White cells.....	14000	7452
Oxygen shortage.....	4832 grs.	Nil.

Patient, Dr. C. Diagnosis—Apoplexy. History—During the last few years the doctor suffered from several strokes of apoplexy, leaving him emotional and with slight paralysis of one side of body. The paralysis was more pronounced in the throat and side of face. Capillary hemorrhages in skin surface were frequent.

He was given intravenous treatments with a great deal of caution at first, starting with small doses in small amounts of water, gradually increasing until he was taking the regulation amount. He took in all nineteen treatments. The capillaries ceased to rupture after the sixth treatment. In two months the paralysis disappeared. He is slightly emotional at the present time.

The following shows the condition of the blood at the beginning and at the end of his treatments; also, the low point reached by the density and the color index:

Blood Test	First	Low	Last
Specific gravity.....	1064	1046	1060
Hemoglobin (Sahli).	120%	50%	95%
Red cells.....4362000			5000000
White cells..... Normal			Normal
Oxygen shortage....	11475 grs.		Nil.

Patient, Mr. C. Diagnosis—Fistulæ. History—About four years previous patient developed abscesses in and about the rectum resulting in fistulæ with many sinuses. Patient had previously undergone several surgical operations without apparent benefit. At the time of examination there was quite a discharge of pus from the sinuses. The patient was running an afternoon temperature.

Gave him seven intravenous treatments. Filled the fistulæ and sinuses daily with a paste made of these tissue salts moistened with water. The sinuses were all healed within seven days. The temperature became normal and the patient was discharged within thirty days.

The following shows the condition of the blood at the beginning and at the end of his treatments; also, the low

point reached by the density and the color index:

Blood Test	First	Low	Last
Specific gravity.....	1060	1052	1060
Hemoglobin (Sahli).	140%	70%	96%
Red cells.....	Normal		Normal
White cells.....	8420		7300
Oxygen shortage....	4763 grs.		Nil.

Patient, Mr. Mac. Diagnosis—Empyema. History—Developed acute pleurisy about nine months previous which terminated in empyema. Drainage was established by proper surgical procedure. At time of examination about one-half pint of pus was coming from the pleural cavity daily. Body of patient was bent to favor affected side. Patient was losing weight.

Gave him eight intravenous treatments. Washed out pleural cavity daily with a 2% cell salt solution. The cavity was then about half filled with a 6% solution and this was permitted to remain in the cavity until the next dressing. All pus formation had ceased in four days and all parts healed in seven days. Fifteen days later when he was discharged his body was erect, he was increasing in weight, and was feeling better than at any time in several years.

The following shows the condition of the blood at the beginning and at the end of his treatments:

Blood Test	First	Last
Specific gravity.....	1056	1060
Hemoglobin (Sahli)..	85%	93%
Red cells.....	Normal	Normal
White cells.....	8900	7000
Oxygen shortage.....	4578 grs.	Nil.

Patient, Mr. H. Diagnosis—Bright's disease. History—About five months previous patient developed acute Bright's disease and for some weeks death seemed imminent. He finally recovered sufficiently to enable him to be about, but was still suffering from a chronic form of the disease. At time of examination patient was very weak and emaciated. The urine contained 25% of albumen.

Gave him twenty-five intravenous treatments. Albumen disappeared within ten days. Patient grew strong and well, and at the end of three months returned to his work in the mountains. After two years he is still maintaining a good standard of health.

The following shows the condition of the blood at the beginning and at the end of his treatments:

Blood Test	First	Last
Specific gravity.....	1050	1060
Hemoglobin (Sahli)..	65%	93%
Red cells.....	3794000	4752000
White cells.....	6230	7000
Oxygen shortage.....	4326 grs.	Nil.

Patient, Dr. W. Diagnosis—Gastro-intestinal fermentation. History—For several years the patient had been a victim of stomach trouble in an aggravated form. Gas, constipation, heart burn, heart block, emaciation and attacks of autointoxication. At time of examination patient's suffering was intense.

Gave sixty-one intravenous treatments. Patient's blood became normal within twenty treatments, but the Doctor insisted upon taking more, and in this respect he was humored. Patient was also given the salts by the mouth. Gas, heart burn, heart block and his extreme condition of distress disappeared before he had taken ten treatments. Gained in strength and weight. As constipation was relieved the attacks of autointoxication became less frequent and less severe and finally was permanently relieved.

The following shows the condition of his blood at the beginning and at the end of his treatments:

Blood Test	First	Last
Specific gravity.....	1050	1060
Hemoglobin (Sahli)..	65%	94%
Red cells.....	3695000	4765000
White cells.....	6450	7340
Oxygen shortage.....	3987 grs.	Nil.

Patient, Mrs. N. Diagnosis—General dropsy. History—General dropsy developed several years previous. Slight at first, but became more pronounced as time passed. Swelling and flushing of the neck and face occurred at infrequent intervals, later it became more frequent and more distressing. At time of exam-

ination sleeping in horizontal position was impossible.

Gave her twenty-seven intravenous treatments. Dropsy and other symptoms maintained until blood was made free of the intermediate products of oxidation, when the symptoms disappeared, the system cleared up and the patient was discharged cured. The patient lost fifteen pounds in weight.

The following shows the condition of the blood at the beginning and end of her treatments; also, the low point reached by the density of the color index:

Blood Test	First	Low	Last
Specific gravity.....	1063	1048	1059
Hemoglobin (Sahli).	115%	55%	92%
Red cells.....	Normal		Normal
White cells.....	6500		7300
Oxygen shortage....	4950 grs.		Nil.

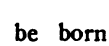
IMBALANCE OF OCULAR MUSCLES IN BABIES.

In the course of an article intended for the perusal of the general practitioner, A. H. Sawins says in *Northwest Medicine:*

"While a babe may be born with anatomic defects of the eyes, as it may be born with defects of other members of its body, it can not be said to have a manifest heterotropia at birth. Since all babes are born blind, or perhaps it would seem more charitable to say since vision is always developed after birth, it would be folly to affirm that a child was born with squint when there were, as yet, no visual axes.

"While the eyes of a new-born babe may be, and doubtless are, responsive in some way to light, it is some months before the retinas develop sufficiently to take any account of objects. Little by little objects of a bright nature begin to stimulate the optic nerve, little by little the visual axes are established, gradually the retina takes the objective image, and gradually the brain begins to recognize and to distinguish one object from another. If now the nerve centers and the retinas of the two eyes have kept pace with each other in their development, a correct visual axis will be established and the child will have perfect co-ordination of accommodation and convergence and binocular vision. If, however, any portion of the visual apparatus fails to keep up proper development balance, the result would most likely manifest itself in some form of heterophoria or heterotropia.

"It is a question how often this disturbance in the development is due to disease or injury and how often to deformity. Personally, I incline to the belief that 99 cases in 100 are due either to disease or injury. The disease may be tubercular, luetic, or zymotic. The injury may result from the accoucheur's forceps, a bump of the head, severe fright, or even a strong, irritating light, any one of which may cause sufficient injury to the delicate tissues to retard their development."



WANTED TO KNOW.

They tell it of a Blue Grass statesman. It may be old; so many of the best things are. He and a Pacific coast member are much together, especially when their wives are out of town. From café to café, or bar to bar, they progress together. The Blue Grass man late one evening appeared at one of the usual halting places alone, carrying weight and exuding dignity.

"You sheen Blank thish evenin'?" he inquired of the mixologist.

"He was here about half an hour ago."

The Blue Grass statesman considered the information carefully, and then fixing the practitioner with a cold, suspicious eye, gravely demanded:

"Was I with him?"

Poisons and Their Household Antidotes.*

By FREDERICK C. SCHUMACHER, Phar. D., M. D.

Lecturer on Materia Medica and Pharmacy, Fordham Medical College.

THE DOCTOR is obliged to be a ready and resourceful man. Especially when his practice lies distant from the facilities and assistance that pertains to the populated cities. He is frequently called upon to meet emergencies when he is not equipped with the technical armamentaria for dealing with them, and must use his wits. Such emergencies are cases of poisoning, accidental or otherwise; and a life may often be saved by the ready utilization of common household antidotes. Possibly, however, in the midst of his modern ultra-scientific conditions, the doctor is apt to forget these simpler agencies; and so Dr. Schumacher wisely brings them to his remembrance in this very practical paper.

This subject is very extensive, and, being allotted only a short period, I have deemed it advisable to bring your attention to some of the most important facts pertaining to poisoning and the proper immediate home or emergency treatment to employ.

I have chosen from a lengthy list of poisons the common or available ones. The antidotes that I will suggest for these poisons are household remedies or agents, found in nearly every home; and, as poisoning generally occurs at an hour when proper aid is somewhat difficult to obtain, the use of these simple antidotes will be of great benefit until further treatment can be instituted. We know that in cases of poisoning the physician is, as a rule, the first person called, and though cases of poisoning are few, still the physician should always bear in mind that any emergency call may be one of poisoning, and a cool head, prompt action, and with the proper antidote, will greatly aid in saving life.

A poison may be defined as an animal, vegetable or mineral substance which, when applied externally or taken into the stomach or circulatory system, causes such changes in the animal economy as to produce disease or death.

Poisons may be classified as follows:

A. Irritant or Corrosive.

Those which produce corrosion, irritation or inflammation; as example, mineral acids, oxalic acid, caustic alkalies, antimony, arsenic, salts of copper, lead compounds, silver nitrate, salts of zinc, iodine, cantharides, mercury salts, carbolic acid, lysol, creosote, etc.

B. Narcotic Poisons.

Those which produce stupor or delirium; examples, opium, hyoscyamus, chloral, etc.

C. Sedative Poisons.

Those which directly reduce vital powers; examples, hydrocyanic acid, cyanide of potash, carbon monoxide gas.

An antidote may be defined as any agent used or given to counteract the effects of a poison.

Antidotes may be classified as follows:

1. Mechanical.

Where by the aid of some application or medium the poison is eliminated from the body. As examples, vomiting, caused by tickling the posterior pharynx or by giving mustard water, warm salt water or a hypodermic injection of apomorphin; or use of the stomach pump.

*Read before the Bronx Medical Society, October 11, 1911.

2. Chemical Antidote.

Where the use of a chemical will cause a chemical reaction to take place with the poison and a new harmless chemical compound is formed, as the use of calcium or lime in cases of oxalic acid poisoning. Here the lime reacts with the oxalic acid and a harmless insoluble compound is formed of calcium oxalate.

3. Physiological Antidote.

Where the antidote given will antagonize the poisonous physiological effects of the poison and thereby retard its progress until the system can eliminate the poison, as bromides or choral, given in strychnine poisoning, or vice versa.

Treatment.

In treating poisoning cases the following cardinal points may be mentioned:

(a) Kind of poison taken.

(b) Amount of poison taken.

(c) How long since poison was taken.

(a) The kind of poison taken can be determined, as a rule, (1) by finding the vial or package that contained the poison somewhere in the neighborhood of the patient; (2) by questioning the patient, if conscious, but care must be observed as to the truth of these statements. I recollect a case of poisoning where the patient had taken arsenic, but deceived the family and the doctor by rinsing his mouth and applying to his hands a weak solution of carbolic acid; on being questioned this patient stated that he had taken carbolic acid and it was only by exclusion and the use of the stomach pump that the true poison was discovered.

(3) By signs and symptoms:

(a) Odor: Smelling the breath or hands may indicate any of the following poisons:

Carbolic acid, lysol, creosote, phosphorus, chloroform, camphor, wood alcohol, etc.

(b) Bleached or excoriated mucous membrane of lips, mouth or pharynx may indicate the following poisons: Carbolic acid, lysol, creosote, silver nitrate, lye, etc.

(c) General signs or symptoms, as follows:

1. Convulsions may give a clue to strychnine poisoning.

2. Comatose condition may indicate narcotic poisoning, as morphine, opium, chloral, bromides, hyoscyamus, etc.

3. Dilated pupils may indicate belladonna.

4. Contracted pupils, opium, morphine.

5. Vomiting and purging may indicate antimony salts, copper salts, mercury salts, zinc salts, arsenic.

Amount of Poison Taken.

As a rule, this can be determined as follows: (a) questioning the patient or friends, but care should be taken regarding the truth of the statements; (b) obtaining the vial or package which contained the poison and judging of the size of the same, and also by old marks or rings on the inner side of the vial or package, showing at what level the contents were previously.

How Long Since Poison Was Taken.

This can be ascertained as follows: (a) By questioning the patient and his friends, taking care as to the truth of the statements; (b) by the physiological signs and symptoms as they exist.

Treatment.

Having ascertained the kind of poison taken, act promptly by using agents or antidotes that will destroy the poison or make it harmless; then remove it from the system, and later treat symptoms as they arise. This is done by first giving a chemical antidote, if there is one; second, by using a mechanical antidote; third, by giving a physiological antidote, and lastly by using after-treatment.

After-Treatment.

1. Purges to remove the altered poison from the system by way of alimentary canal.

2. Diaphoretics and diuretics to aid in eliminating the altered poison by way of the skin and kidneys.

3. Emulsions, such as milk, white of eggs, oatmeal gruel, to soothe excoriated and inflamed surfaces.

4. Treatment of other symptoms as they appear by the proper therapeutic agents.

Household Antidotes.

An antidote for arsenic that can be very readily obtained is tincture of iron mixed with water and enough ammonia added to give the solution the odor of ammonia. This combination forms a magma, and give the entire combination to the patient. The iron, in this form, forms with the arsenic an insoluble compound known as iron pyrites.

The antidote for iodine is a starch solution. This is made by taking about one teaspoonful of starch mixed with about one pint of water and boiled and allowed to cool. This is given the patient *ad lib.* This starch solution with the iodine forms a blue insoluble iodide of starch.

The antidote for lye or household potash is vinegar. This forms with the lye an acetate of potash liberating carbon dioxide gas.

The antidote for morphine and strychnine which can nearly always be obtained readily is strong tea. This is made by allowing the tea to stand for a considerable length of time, say about half an hour, and giving to the patient to drink. The tannin of the tea with the alkali forms a precipitate as an insoluble tannate.

The antidote for sugar of lead is any soluble sulphate, either sodium phosphate, known as Glauber's salts, or magnesium sulphate, known as Epsom salts. Either one of these salts is dissolved in water and given to the patient. This forms with the sugar of lead an insoluble sulphate of lead.

The antidote for oxalic acid is lime water freely given. If there is no lime water at hand, plaster from wall will do as well. Break off a piece of plaster, rub it to a powder and mix with water and give it to the patient to drink. This forms with oxalic acid an insoluble calcium oxylate.

The antidote for carbolic acid, creosote and lysol is some soluble sulphate or alkali. There is a question in my mind whether soluble sulphate acts as the authors have stated. In theory it sounds very well to say that the soluble sulphate forms with carbolic acid a sulpho-carbolate or acetate of magnesia, but I am inclined to believe that by the time this combination has been produced, the patient is in no condition to receive the benefit of the antidote.

SLIGHT BRONCHIAL DILATATIONS IN SMALL CHILDREN.

Hutinel, in *La Presse Médicale,* describes small bronchial dilatations as not infrequent in children, although not so serious and intractable as in the adult. They are not often infected, and fetid expectoration is rarely seen. They occur in hereditary syphilis, in tuberculosis rarely, after bronchopneumonia, measles, pertussis, and the aspiration of foreign bodies into the trachea. They are accompanied by a considerable amount of sclerosis and dilatation of the blood vessels of the lung. They often begin insidiously with few symptoms, slight fever, almost no dyspnea, persistent cough, and little else. When they have a more acute course there are more marked fever, purulent expectoration, and moderate dyspnea, with a harrassing cough, which recurs easily. The physical signs are moist, subcrepitant râles, large and small, gurgles, and rhonchi. The vesicular murmur is impaired, the voice and cough cavernous. If the sclerosis is not marked the cavities may disappear with the development of the lungs. Treatment in the acute attack consists of enveloping the chest in moist compresses. Later general tonic and hygienic treatment, respiratory gymnastics, and life in the open air are valuable remedies.

Treatment of Nasal and Naso-Pharyngeal Catarrh.

By L. HERBERT LANIER, M. D., Texarkana, Tex.

CATARRH may almost be said to be a national disease. It is peculiarly pertinent to the climate and the habits of this country, and is widely prevalent. While in a certain sense it is protean in its manifestations, it is, as Dr. Lanier reminds us, really very constant in its underlying pathology, differing chiefly in the part of the body that it attacks. The author makes a powerful plea for an abandonment by the practitioner of the old "dab and squirt" treatment of naso-pharyngeal catarrh, and the substitution of a careful, rational search for and removal of the cause of the trouble—most often to be found in enlarged turbinals, polypi, spurs, etc., and their surgical removal.

May I not be pardoned for using the term catarrh of nose and throat? It is a vague term. The conditions ordinarily termed catarrh of the nose and throat are many because there are few pathological conditions of either which are not accompanied by a catarrhal inflammation.

Therefore, the word catarrh is firmly fixed in medical nomenclature and only needs the name of parts affected as a prefix to the word to convey an idea of the exact pathological condition, whether it be an acute or chronic inflammation.

There is little likelihood of confounding this affection with any other if the proper diagnostic precautions are taken.

There are various stages of catarrhal inflammations, ranging from simple acute catarrh of nose and throat to hyperplasia, and finally to the atrophic stage, so much dreaded by all sufferers from catarrh.

The purpose of this paper is to emphasize the importance of individualizing and treating each case according to the pathological conditions found and to discourage routine treatment as practiced by the majority of physicians who treat catarrh.

Is it not a fact that nearly all physicians occasionally attempt to cure chronic catarrh of nose and throat by prescribing an atomizer and some antiseptic solution, eucalyptol, albolene, etc., or perhaps treat them in the office with similar solutions, with nebulizer, in a routine manner?

Only recently I removed from a man, seventy-three years of age, a mass of mucous polypi, the enormous size and number of which had completely obstructed nasal breathing for three years. Yet he had been treated all this time for catarrh by various physicians with sprays of various kinds. Hence the necessity of making a thorough examination to determine the cause, and in turn, seeking to remove the cause.

I shall not speak of the treatment of the acute stage of rhinitis and laryngitis, since this would call for the treatment of colds, coryza, influenza, croup, etc., but wish to invite your attention to the fact that the chronic catarrh is not found until after this acute inflammation has lowered the resisting power of the mucous membrane of these organs to climatic changes and the invasion of pathogenic germs.

The most frequently found of all the catarrhal affections is hypertrophic rhinitis; the septum, like the turbinals, is red and thickened; the obstruction to the free passage of air through the nose causes partial or complete mouth-breathing. The mucous membrane is thickened and then an increase in connective

tissue. Patients complain that they take cold easily and that when lying on one side the lower nostril closes.

Watery eyes, impairment of hearing, tinnitus aurium, nasal voice, abundant secretion from the nose and throat, especially on rising in morning, and occasional frontal headache, are common sequels of this disease.

Prognosis: Modern methods of surgical treatment afford an excellent prognosis. Medical treatment alone will not suffice to remove hypertrophies. The electric cautery is now the most frequently resorted to, except for cartilaginous and bony growths which require the knife, the saw or the drill. Personally, when a cautery is indicated I use chromic acid from 20% to pure crystals. More often than electric cautery for the fibrous growth, the hot or cold snare scissors and chromic acid are employed.

The cautery electrode can be heated and operated with fluid or storage battery as well as with electric current for incandescent lights.

On using electric cautery, chromic acid, or monochloracetic acid to cauterize hypertrophied tissue, the area to be cauterized should be anesthetized by dipping cotton application in adrenalin, then in pure cocaine crystals, then by applying this to field of operation; allow this to remain a few minutes, and whether using electric or chemical cautery do not leave a plug of cotton saturated with solution camphor and menthol in nose, as advised by most authors; it prevents proper drainage. Only a small area should be cauterized at one treatment. Allow one week to intervene between cauterizations.

When deformities of the cartilaginous septum exist their removal is best accomplished by a knife, having a tapering, blunt point and by cutting upward; exostoses are sawed off in like manner.

When the turbinal bones become enormously hypertrophied turbinectomy is resorted to in order to remove the entire bone. This is accomplished by saw or spokeshave and, after any of these surgical procedures, it is proper to use a spray of Dobell's solution, followed by application of adrenalin ointment until a cure is effected; but of what use would they have been previous to operation?

Treatment of Atrophic Nasal Catarrh or Chronic Fetid Rhinitis or Dry Nasal Catarrh.

In this variety of nasal catarrh is where the atomizer nasal douches and various spray solutions are chiefly indicated, because it is not necessary to resort to surgical treatment except when ulceration has caused perforation of the septum or necrosis of the bony walls of the nose. Fortunately, this variety is found in less than 10% of all catarrhal cases.

The first step in the treatment is to syringe out the nasal cavities and loosen all scabs and crust with a solution of castile soap—a piece the size of end of little finger to cupful of warm water. Follow this with a thorough washing out of the nose with permanganate potassium, then instill into each nostril a half-drachm of equal parts of hydrogen peroxide, aqueous extract hamamelis, and cinnamon water; allow fifteen minutes for it to be absorbed, then apply with powder blower. Use equal parts aristol and boric acid. This treatment used daily for a few months will come as near effecting a cure as is possible in atrophic rhinitis. Of course, nothing can compensate for the loss of tissue due to atrophy; "simple chronic naso-pharyngeal catarrh." The presence of inflammatory condition of whatever type in the adjacent territory predisposes to naso-pharyngitis. If there be hypertrophy of the adenoid tissue it should be removed, or if any of the tissues are markedly thickened, surgical measures should be promptly adopted. Enlarged faucial tonsils should be removed and any adhesions should be broken up; use

of non-irritating solutions is essential. The application of 1.20 tri-chloracetic acid or 2% solution chlorid zinc preceded by spray (Dobell's solution), followed by post-nasal spray of menthol, camphor and eucalyptol in albolene suffice to establish a cure if persisted in a sufficient length of time.

Treatment of Atrophic Naso-Pharyngitis.

The treatment of the atrophic process in the naso-pharnyx is identical with that in the anterior nares, and the same treatment used in the anterior nares proved most efficacious in the naso-pharnyx; except, that in freeing the post-nasal space from the pent-up secretions, which so often cause irritation or even ulceration, a post-nasal syringe and post-nasal swabs and curved applicators must be used. Syringing first with tepid alkaline antiseptics, then swab with equal parts peroxide - hydrogen, aqueous extract hamamelis and cinnamon water, then follow with a spray of oil of cassia and oil of sandalwood of each six drops to the ounce, liquid abolene; one drop of essential oil of mustard may be added to the above. For the dryness great relief can be given by mopping with petroleum, and it seems to stimulate the muciparous glands, which is essential to recovery.

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THE DANGERS OF RHEUMATIC FEVER.

It is now generally believed that rheumatic fever, like the measles, is the result of a specific germ. But it is thought also that this germ will not be harbored in the system until there has been some predisposing condition—as exposure to cold and dampness, improper food, weak bodily resistance and the like. In rheumatic fever the first attack paves the way for the second and perhaps others, and those thus afflicted should diet carefully, avoid over-fatigue, undue exposure, and all dampness, and whatever else has been found harmful.

Acute rheumatism or rheumatic fever does not usually result fatally, especially from the first or second attacks, but it does have a tendency to affect the heart. Serious heart troubles often occur during convalescence when the heart, weakened by the disease, is made subject to any unusual strain.

Heart trouble is particularly liable to follow when children are sick with rheumatic fever. Even if the attack seems mild the child should be kept in bed, and every possible precaution taken to prevent another attack. Light-weight woolen underwear should be used, and the feet carefully protected against cold and wet.

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SODIUM CINNAMATE IN TUBERCULOSIS.

Lautier, of Bordeaux, in the *Journal de Medecine de Paris* for August 12, 1911, states that this salt may be given per os, hypodermically, or intramuscularly. Whatever method is used, the dose remains at one and a half grain daily. For administration by the mouth the following prescription is suggested:

Sodium cinnamate.....15 grains.
Distilled water..... 1 drachm.

M. Sig.: Dessertspoonful twice a day before meals.

For hypodermic or intramuscular injection:

Sodium cinnamate..... 1½ grains.
Physiological salt solution... 1 c.c.

M. For one injection.

As the hyperleucocytosis caused by sodium cinnamate lasts only some twenty-six hours after absorption, it is necessary that the patient receive a daily dose sufficiently large to keep his organism in a perfect condition of resistance.

Incidentally, the proprietary Guaio-Cal., contains as its principal constituent a combination of cinnamic acid, guaiacol, bismuth and calcium. It has been found very valuable in tuberculosis.

The Treatment of Malarial Fever.

By JOHN ALBERT BURNETT, M. D., Marble City, Okla.

MALARIA, like the poor, we have always with us. So, as a rule, does the unfortunate patient who happens to get it in his blood. It is one of the most baffling, tiresome complaints, for both patient and physician, in all the category of diseases. One trouble is that all of our treatment is, and must of necessity be, sheerly empirical. Such, of course, is the treatment here offered by Dr. Burnett; but it is an intelligent, rational treatment, evolved out of experience, and therefore ought to prove helpful to our readers in their combat with this most obstinate of diseases.

In the treatment of malarial fever, intermittent and remittent type, the first thing to give is a good laxative. Calomel or the C. C. pills can be used. Magnesium sulphate is a good reliable laxative. If a palatable preparation is desired, and it usually pays to prescribe pleasant medicines, the following can be used:

Magnesium sulphate	1	pound.
Coffee roasted and ground..	2	ounces.
Hot water	1½	pints.
Saccharin	85	grains.
Oil cassia	10	drops.
Oil cloves	10	drops.
Oil anise	60	drops.
Oil sassafras 100		drops.
Vanillin	10	grains.

Tr. cudbear to color. Add the coffee to the hot water and allow to stand 15 minutes, pour off, then add the salts. Mix the other ingredients and triturate with about four ounces of talc or carbonate magnesia. Add the salt solution slowly, constantly stirring, and filter, adding through the filter enough water to make two pints.

In malarial conditions, I consider sodium hyposulphite a better laxative than the magnesium sulphate. Sodium hyposulphite really possesses anti-periodic influence, and has been used alone with good results in the treatment of malaria. It can be made into a palatable vehicle if so desired.

Another palatable laxative is the aromatic wafers of phenolphthalein, which are made to eat like candy, although phenolphthalein is not a very strong laxative and will not do in some cases. The aromatic fluid extract of cascara is a palatable laxative, and can be used in some cases.

A good antiseptic laxative is:

Potassium chlorate	1 drachm.
Fld. ext. echinacea	5 drachms.
Fld. ext. cascara, aromatic..	4 drachms.
Simple syrup	1 ounce.
Aqua, q. s. ad.....	4 ounces.

Sig. Dose one teaspoonful in a little water every two hours.

Still another antiseptic laxative is:

Resorcin	2 drachms.
Fld. ext. nux vomica.....	2 drachms.
Fld. ext. cascara	2 ounces.
Ext. licorice	2 ounces.
Simple syrup, q. s. ad.....16	ounces.

Another good mild antiseptic laxative is:

Resorcin 32	grains.
Milk of magnesia	6 ounces.
Aqua mentha pip	2 ounces.

Dose, one tablespoonful.

A good pill is what I call the Pitzer pill:

Ext. colocynth comp.....12	ounces.
Ext. belladonna	1 ounce.
Ext. nux vomica	4 drachms.
Podophyllin	2 drachms.

Make into 6,000 pills.

Dr. Geo. C. Pitzer said, "People have learned to rely upon these pills and say they remove biliousness, overcome constipation, and always move the bowels gently without exciting pain or nausea and are exceedingly convenient in an

office where we dispense all the drugs we prescribe."

The fever can be reduced and controlled with acetanilide, three to six grains given with one-half to one drachm of fluid extract of achillea millefolium, followed with a cup of hot water; this to be repeated as needed. This will cause diaphoresis and eliminate much foreign matter from the system.

The way to give hot water or to give medicine in hot water is to have the water in a teacup, pour out small quantities into the saucer, drinking it as hot as possible, as it cools like drinking hot coffee. Hot water can not be drunk out of a cup very handy; the first few swallows may be cool enough, but the rest would be too hot, and take too much time to cool. I consider it very important to instruct a patient how to drink hot water or to take medicine in hot water.

Quinine is a good anti-periodic, but it tastes very bitter. The National Formulary syrup of quinidine can be used in place of quinine, as it is not bad to take. In all, or most all, cases I prefer to add potassium iodide and mercury bichloride to the syrup of quinidine. Potassium iodide is especially indicated in chronic malaria as well as of value in the majority of acute cases, and in most all cases where potassium iodide is indicated mercury bichloride can be added with advantage. Most all preparations of quinine and cinchona alkaloids should be followed with an acid in course of one or two hours,

One of the best I know for this purpose is the Brodnax acid iron tonic, which is made as follows:

Hydrochloric acid	1	ounce.
Nitric acid	1	ounce.
Iron sulphate	2	drachms.

M. and let digest 24 hours. Dose, 5 to 10 drops in a glass of sweetened water.

Use the full strength acids when making this.

A good anti-periodic, but a very bad tasting one, is as follows:

Quinine sulphate	1½	ounces.
Iron sulphate	2	drachms.
Magnesium sulphate	4	ounces.
Sulphuric acid, C. P.	4	drachms.
Aqua, q. s. ad	32	ounces.

M. Sig. Dose, one tablespoonful three or four times a day.

As I state, this is bad, but is certainly reliable.

Aristochin is a tasteless powder, containing 96.1% of pure quinine base, but its cost prevents it from coming into general use.

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ETIOLOGY OF DERMOID CYSTS.

Yamasaki reports that from 1902 to 1909, 203 cases of ovarian tumors were operated on in the clinic of the university at Kumamato, Japan. Out of these there were seventy-one dermoids and 132 other tumors. Of 241 extirpated ovarian tumors eighty-four were dermoids, that is 34.85%. This is a considerably larger proportion of dermoids than is given in any other statistics published up to date: in fact, it is double most reported statistics. The age of the patients is from a few months to sixty years, the majority being between twenty and thirty years of age. Sneguireff maintains that in such cases there is increased fruitfulness of the mother. Pfannenstiel thinks it untenable that there is any hereditary element in this species of tumor. Dr. Freund thinks that infantile uterus is often found in connection with these tumors. This condition is more frequent in the right than the left ovary. The tumor is bilateral in about 8% of cases. These tumors generally contain hair, and this may be of any color from white to black. The color of the patient's hair bears no relation to the color of that found in the cyst. The hair of Japanese women is black, but blonde and white hairs were found in the tumors observed. The hairs are from a few millimeters to some feet in length, and they may be rolled up in snarls, single, or in bunches.

Old Ophthalmology.

By GEORGE W. VANDEGRIFT, M. A., M. D.
Instructor in Ophthalmology, Cornell Medical College.

MEDICINE is a composite product of a slow evolutional process, to which all ages and peoples have contributed. Hence it would seem that in order to be thoroughly equipped for the task of interpreting the physical maladies of mankind, and of applying suitable remedies, the physician must be at least on speaking terms with the history of medicine, at all events with its salient stages and their significance. Dr. Vandergrift has here given us a brief and succinct account of the historical aspects and development of one branch of medical science—that of ophthalmology. It not only makes interesting reading, but throws much valuable light upon the scientifie side of the subject, and we urge our readers to peruse it with this doublc viewpoint in mind.

To review briefly the course of the science of ophthalmology from earliest times to the modern era proves not only instructive, but also entertaining. Occupying, as it always has, a prominent place in medical practice, a perusal of its history throws side glances into the history of other departments of medical science. And if, while paying due reverence to the achievements of our medical ancestors, we pause at times and smile over their follies and absurdities, we surely can not be censured too deeply, for who will be so bold as to deny that the time will come when our descendants will smile over our deeds that are, no doubt, at times as absurd as those of our ancestors. The old picture of eighteenth century practitioners, long-robed and peruked, with cane and official hat, pompous and self-satisfied, regarding all else but the writing of Galenic prescriptions as beneath his dignity, differs little, except in externals, from that of not a few of our busy consultants of today. The days have passed when we practitioners were "disreputable fellows," but much of the superstition of the past still clings to us—in spite of our smug denials—as well as to the laity. The world still crowds to the quack and charlatan, bone rubber or faith curist, and on the countryside still we meet the itinerant surgeon breaking and pulling teeth by the crash of drum and antics of the clown. The ways of the world change slowly and we, who even yet have not reached the medical millenium, may learn from history, humility and modesty.

The earliest records we have in the long history of ophthalmology come down to us from the ancient Egyptians. The Egyptian practitioners enjoyed a reputation as wide as the world then was, and were called to far-off courts to treat not only ophthalmological, but also medical and surgical cases. Their knowledge of the eye was wider and deeper than we are apt to suppose. Familiar they were with many ocular diseases, pterygium and granular lids, corneal inflammations and catarrhal conjunctivitis. Glaucoma was known to them under the term green disease, probably from the characteristic discoloration of the pupil.

From the early Egyptians we pass to Hippocrates, whose observations were made with a precision and nicety that have made his name immortal. He added much to the Egyptian knowledge of external diseases of the eye and devised many operations, prominent among which was one for the relief of

trichiasis. He mistook senile cataract, however, for glaucoma, and believed that the lens and the vitreous are the true organs of sight.

In this hurried passing, mention only can be made of Antyllus, the most famous eye surgeon of antiquity, who first described the extraction of cataract and made the first crude guesses at the pathology of blenorrhea and trachoma, epidemic in his day. As he believed in common with Hippocrates that diseases of the eye were due to injurious matter flowing to the eyes from the brain, he strove to prevent this by making long, deep incisions on the brow from temple to temple and allowing them to suppurate. Through these incisions he believed he could drain off the "materia peccans" before it reached the eyes.

As we approach the middle ages we find that medicine, with all other branches of science, fell under the pall of superstition and ignorance. Observation fell into disuse and experimentation existed not at all; and, while much of the wisdom of the ancients was lost, a slavish dependence was maintained upon the authority of their teaching, particularly upon what was based upon folly and ignorance. The practice of medicine fell into the hands of the clergy and that of surgery into the hands of the lowest class of barbers, bath-keepers and midwives. Until the revival of anatomy in the fourteenth century and the awakening of surgery under Charles V. of Spain, the practice of medicine, except in the hands of the priests, was held as a low and despicable calling.

Many quaint and curious methods of treatment in ophthalmic cases held sway in the dark ages. From the fourth century we get the following:

"In the case of a splinter in the eye, this should be touched three times with the finger tip, the physician expectorating each time," and repeating a certain Latin rigmarole. "A stye may be removed from the eyelid by touching it nine times with the points of nine barley corns, the physician expectorating each time." An abscess situated on the right eye may be removed by touching it with three fingers, the physician expectorating thrice, and saying: "The mule brings into the world no young, nor does the stone produce wool; so may this disease come to no head, or if it comes to a head may it wither away."

Stephen, of Athens (A. D. 600), in his treatise on ophthalmology tells us of the following remedies: Crocodiles' blood in corneal opacities; bed bugs' and frogs' blood in trichiasis. He advises the wearing of a specially devised apparatus with openings to correct the lines of vision in strabismus—certainly a judicious procedure. A later ophthalmologist, far in the sixteenth century, gives these blithe directions for the preparations for a cataract operation: The patient must abstain from all drink but water for two days before the operation, the surgeon doing the same.

If Christian medicine was sterile the same can not be said for that of the Pagan peoples. Jewish and Arabian physicians were far-famed and prosperous. They were the physicians-in-ordinary to the princes and wealthy merchants. Through the darkness of these centuries the torch of civilization was kept burning by these church-despised men of science and to them, and in particular to the Arabians, must we look for any advance in ophthalmology. They were familiar with many of the external diseases of the eye and devised the grattage operation for trachoma. In the Arabian hospitals there were special wards for ophthalmic patients, something we did not have until the nineteenth century.

These Pagan physicians flourished from the eighth to the thirteenth centuries and their medical treatises were

used as textbooks in European universities as late as the eighteenth century.

With the advent of the fourtenth century, probably as the result of the invention of gunpowder and the consequent gun-shot wounds of the vigorous wars of that period, the practice of surgery came rapidly to the fore. The glory of Spain was mirrored not only in attainments of her commerce, statesmanship and literature, but also in those of the practice of surgery. Physicians educated in the best universities practised all branches of medicine and surgery indiscriminately; and the glory of her physicians did not wane for many centuries, till she herself fell from her proud position among the nations. In other European countries surgery, and this includes ophthalmology, was relegated to the laity, barbers, bath-house keepers, wandering quacks, and apothecaries; physicians deeming beneath their dignity and contrary to the tenets of religion to shed blood. The itinerant surgeons of the latter part of the middle ages practiced ophthalmology extensively throughout England, Germany and France; they performed cataract operations and others of equal importance in open markets, accompanied by a blare of trumpets and antics of monkeys and mountebanks. Benedetti, a writer of that day, complains of the frequent blindness that followed these operations and lamented that ophthalmology was in the hands of peasants and hired laborers. And yet these ignorant people were sought after not only by the masses, but even by princes and potentates. Finally, in the later part of the fifteenth century, laws in the various countries put a stop to these practices.

Early in the fourteenth century, it is of interest to learn, Guy de Chaullic advised the wearing of eye glasses (berelli, because ground from the beryl) in those cases where eye waters fail to improve the sight.

The turning point from ancient to modern surgery lies in the sixteenth century, due no doubt to the wars of France and of the Netherlands, and he who, from the brilliancy of his deeds, may be called the father of modern surgery is Ambroise Paré, a barber and the son of a barber. He learned the rudiments of his trade in his father's shop, and, after becoming a barber-surgeon, entered the army and there gained the experience that made his achievements possible. Laying aside the cruel practices of the ancients in the treatment of wounds, he advocated sense and cleanliness. Refusing to treat all wounds, no matter how clean, with cauterization by boiling oil and red-hot irons; he introduced the use of the ligature, not only in fresh bleeding wounds, but also in amputations. Though not interested in ophthalmic practice his beneficent influence spread to that branch of surgery and the ophthalmic surgeons began to discard the authority of Galen and the ancients and to found their practice upon observation and experiment. During the life of Paré appeared in England the first English treatise on the diseases of the eye, written by Walter Bailey, physician-in-ordinary to Oueen Elizabeth.

From this time forward the science of ophthalmology began to assume the garb it wears today, gradually passing out of the hands of charlatans into the care of highly-educated and competent surgeons. Particularly was this the case in France where, in 1705, Antoine Maitre Jean first recognized the true seat of gray cataract in the lens. In Vienna in 1773, Joseph Barth began to give separate lectures in ophthalmology and founded an ophthalmic hospital; while in England, William Cheselden devised the operation of iridectomy for visual purposes, and John Dalton first directed the attention of surgeons to the subject of color blindness.

Alcohol in Medicine.

By WILLIAM F. WAUGH, M. D.*

THERE be many who regard alcohol in medicine in the light of a punctured bubble—a discredited fraud. This, we think, is rather too extreme a view of the situation. But it is certain that modern knowledge and investigation have done much to discount its exaggerated value and to moderate its indiscriminate use. We have squeezed the water out of its stock, so to speak. This little article of Dr. Waugh's is a very concise statement of the present status of alcohol in medicine; and, like a wise constructionist, in taking the alcohol bottle out of our hands in this and that clinical crisis, he does not forget to put into our hands the proper and effective substitute.

The physician has been reproached with arousing or confirming the alcohol habit by his insistence on the use of this potent drug as a remedy. It is not that he has been in any respect oblivious of the perils following its use—in truth we know these far better than do our brethren of the long robe. But we physicians are endowed with what may be termed a professional conscience, and as long as we believe our patient's well-being requires any particular remedy we are bound to make use of it. As far back as 1869 the State Medical Society of Pennsylvania adopted resolutions recognizing the dangers ensuing from the use of opium and alcohol, but asserting that these powerful remedies could not be dispensed with in the practice of medicine. But we have not stood still.

When I commenced the study of medicine forty years ago, the belief of the medical profession and the public in stimulants was universal, and "stimulant" was but another name for alcohol. If a patient was weak we must give him whiskey; if he did not improve we must give him more whiskey, and if he died it was because we did not have the nerve to push the whiskey.

But the patients did die, despite the most liberal use of whiskey, and that in uncomfortable numbers, so that the suspicion arose that there might be such a thing as giving too much whiskey.

The truth was there, glaringly evident to the slightest investigation. A reaction set in; whiskey should be given with judgment; it might be dispensed with altogether, and it dawned upon us that the less whiskey we gave the better were the prospects of recovery.

My first lesson here came from a study of the effects of alcohol with the nursing mother. It was then held to be a matter of course that she must use beer, ale, porter or port wine to enable her to nourish her babe. But the babe did not thrive until it was weaned, when a remarkable reaction toward a healthy state appeared. Then we investigated the milk of cows fed on distillery slop, found it unwholesome, and realized that we had been teaching the mother to give swill milk to her infant.

In one department of medical practice after another similar course was followed, and the alcohol gradually fell into disuse with many physicians, because the sick did better without it.

*Address delivered by request at the First Methodist Church, Atlantic City, June 6, 1909. (NOTE—The material enclosed in brackets was omitted from the address, this being information which the writer looks upon as the exclusive property of the medical profession and hence unsuitable for a lay audience.)

We next took up the study of alcohol to ascertain just what it does, and this resulted in the discovery that it is not a stimulant at all, but a sedative, and that instead of aiding to tide our patients through emergencies we had really added an important weight to the load we were carrying.

But why, then, should alcohol have won such favor? For it surely did something to make men believe in it. We trace the repute of this potent agent to two factors—it paralyzes the coats of blood-vessels, relaxing their tension so that the blood flows through them more easily, and the heart's work is eased; and by paralyzing the sense of apprehension, of fear, self-confidence of the patient is restored, and this powerful influence toward death is averted. So important is this element that alcohol has won universal confidence as a remedy for snake-bites, although we know that it directly increases the special action of serpent venom, which is to paralyze the abdominal blood-vessels, allowing the blood to collect there until the patient faints and dies from lack of blood in the brain. Understanding the real action of alcohol, we now know just why it has won favor as a remedy in many different maladies. In the meantime we had been giving particular study to other remedies furnished us by modern chemistry, remedies which, being of uniform chemical structure, could be depended upon as always doing exactly the same thing when administered under similar conditions. Among these we found that we had remedies that did every good thing that alcohol could do, and did it better. The only difference was that whereas alcohol might do some ten or more things fairly well—ease pain, stop cramps, relax tension, bring out eruptions, soothe cough, induce sleep, increase appetite, check discharge, relieve faintness, break up colds, etc., for each of these ten or more things a separate remedy was required, each of which was better than alcohol in that one instance only. In other words, the studious physician had in his knowledge-box ten better remedies from which he got the very best results, while the lazy doctor gave alcohol for all the ten and got fair results. A good workman selects his tools with reference to the need; he does not drive screws with a chisel. [Thus chloroform or morphine relieves pain; hyoscyamine stops cramps; gelsemium aconite or veratrum vir. relaxes tension; atropine, camphor and glonoin brings out eruptions; codeine or heroin soothes the cough; hyoscine or veronal induces sleep; quassia increases appetite; astringents and antiseptics check discharges; glonoin relieves faintness; atropine, camphor, quinine, capsicum and pilocarpine break up colds; while as a general stimulant strychnine is incomparably better than alcohol, and as special stimulants of various organs, such as heart, lungs, brain, etc., we have admirable agents exactly suited to our needs, in digitalin, atropine, cactus, and many others, whose varying powers may be exactly fitted to the various needs displayed by various patients. And for exactly the needs above mentioned the remedies named are better than alcohol. As for snake bites, we have in strychnine a remedy that neutralizes the effect of serpent vemon as directly as alkalies neutralize acids; and the treatment of this condition consists in administering enough, and just enough, strychnine, although the dose required may even exceed greatly that which would inevitably kill the patient were it not neutralized by the venom.]

Our final conclusion is that there is not a use to which alcohol can be put as a remedy for which we have not a better one in the resources of modern pharmacy, judging simply on their relative merits as remedies and entirely apart from the frightful perils to which alcohol opens the door.

Looking on the matter absolutely from the scientific standpoint, he has discarded alcohol, and stands ready to meet the whiskey doctor at every step with a better remedy for every ill to which alcohol could be applied.

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LORD BROUGHAM AS HIS OWN PHYSICIAN.

Dr. I. D. Chepnell, who from 1850 to 1858 was resident physican in the family of the last Lord Holland, contributes to *The Lancet* from his diary of 1855 the subjoined extract, which may be considered as a successful departure from the ordinary routine by an unqualified practitioner.

Extract rom a Medical Diary of 1855.

A constant visitor to Holland House during June and July was Lord Brougham, who was in somewhat indifferent health, and glad to escape for a few nights from the heat and dust of London to enjoy the comparatively fresh air and cheerful suroundings of Holland House. On one occasion he arrived late in the evening, having contracted a bad cold attended with sore-throat and loss of voice. I advised him to go to bed at once, as he seemed feverish, and I prescribed some appropriate remedy. With the first part of my recommendation he complied, but with the second he would have nothing to do, saying, "Don't you know that a man at 40 is either a fool or a physician, and sometimes both?" adding sharply, "How old are you, Doctor?" I was happy to be able to assure him, on wishing him good night, that I was only 26 years old.

Towards two o'clock in the morning I was awakened by a loud rapping at my door and, on opening, found Lord B. standing in his nightshirt with an empty pitcher in his hand. In voice, almost unintelligible from hoarseness, he announced that he wanted a can of boiling water, some carbonate of soda, and a pot of currant jelly. I thought he must be delirious, but as he was not to be put off by argument, I thought best to pacify him by compliance with his strange request. At that time of night, everyone being sound asleep, the desiderata were not easily obtainable. Nevertheless, I set out on a foraging expedition; I woke up the old man of the kitchen, the old woman of the still-room, and returned with my spoils to the oddest of men upstairs, Lord B.

He was quite ready with his empty washing-jug, and proceeded to empty the pot of jelly into this receptacle, adding two large tablespoonfuls of soda, and filling up the jug with boiling water: the result, a foaming mixture of blood-red color, and worthy of Macbeth's witches, he carried off in triumph to his room. At half-past six I awoke, and with a guilty sense of having neglected my patient I went and rapped at Lord B.'s door, first gently, then loudly, and receiving no answer, stealthily opened it. On the floor was the jug empty, as was also the bed. The room was in great disorder, and the window wide open. I was really alarmed, and a painful sequence of thoughts ran through my mind —delirium, suicide, inquest! with a rider of temporary insanity, and culpable neglect on the part of attendant physician! I rushed to the window, and was relieved to find no trace of such a terrible disaster.

Returning to my room I dressed myself hastily, and running downstairs to the library found it untenanted. The floor was strewn with torn-up papers, and on one of the writing tables lay a pile of letters ready to post, all the work of my enegetic patient! From a housemaid who was dusting the apartment I learned that Lord B. "had been up since five, and was now gone out." I met his lordship at the breakfast table shortly afterwards and found him perfectly well, his strange remedy having worked wonders.

CURRENT MEDICAL LITERATURE.

A NEW PLAN TO FIGHT TUBERCULOSIS.

Hospital for the Family.

AN experiment to demonstrate the feasibility of a plan to wipe out the centers of tuberculosis infection in the tenement districts of New York and other cities has been undertaken by the New York Association for Improving the Condition of the Poor. An entire section of East River homes, more familiarly known as the Vanderbilt Tenements, has been leased for three years and has been converted into a home hospital. In this new institution the Association has begun a new experiment in the home treatment of consumptives and relief of persons suffering from the disease. Into each of the twenty-four apartments will be moved a family which is dependent because of tuberculosis and which has been under the care of the Association. For the next three years an effort will be made to determine whether the spread of tuberculosis can be checked and cures effected under medical direction, aided by competent nursing, adequate relief, freedom from worry, fresh air and sunshine, and room for reasonable segregation. In this way the Association hopes to get near the home of the poor consumptive.

This new experiment was prompted by the increasing number of families that are reduced to dependency by tuberculosis, and by the length of time that it is agreed will be necesary to provide hospital and sanatorium care for all who are in need of treatment. Out of the total of 3,500 families now under the care of the Association, there are 284 in which there are one or more cases of tuberculosis. In fifteen of these families both parents and one or more of the children are consumptives. According to the statistics of the Health Department, New York City suffered a loss of 10,074 lives in 1910 as the result of this one disease. There were in the same year 32,065 new cases reported, and it is conservatively estimated that there were 50,000 living cases in the city a year ago. Despite the aggressive and successful campaign now under way for the adequate care of tuberculosis patients, it is admitted by experts that several years will elapse before ample hospital and sanatorium care can be provided.

In this new Home Hospital the Association will provide for segregation within each apartment and for fresh-air treatment, especially for the children. A hospital and sanatorium régime will be instituted and everything affecting the health, both of the patient and other members of the family will be carefully supervised. Equal attention will be paid to the social and medical side of the families.

Patients will be allowed to work only on the advice of the physician, and when permitted they will begin gradually as their strength permits. In order that cures may be permanent, families will not be dismissed from the hospital until the patients have practically recovered full strength and until they are able to work full time. After dismissal each family will be moved into a suitable home and supervision will be continued by the Association until it is assured that the cure is permanent and the family actually self-supporting.

The tuberculosis children and those predisposed to the disease will attend an open-air school, which will be established on the roof of the East River homes. This will be equipped and the teacher will probably be provided by the Board

of Education. The children of school age who are in good health will attend the public school, and others whose health will permit will work.

This experiment, which experts consider to be of national importance, will be conducted under a special committee of the Association, consisting of Dr. Linsly R. Williams, chairman; Mr. Cornelius N. Bliss, Mr. Harry Pelham Robbins, and Dr. Livingstone Farrand. Miss Helen Knight Smith has been engaged as a supervising nurse and will devote her whole time to the personal direction of the experiment. There will be a visiting housewife, who will assist the housewives with their heavier work, the Association's dietician will give individual and group instruction in food economics and food values, and visitors and other members of the A. I. C. P. staff will co-operate on the social side of the experiment.

The Association announces that practically all of the fund necessary to finance the experiment for the first year has been raised.

The Association's general agent, Mr. John A. Kingsbury, said today: "The cost of this experiment will cover not merely the maintenance of the patients and the medical oversight, but it will cover also the relief of the family. When it becomes necessary for the chief breadwinner in the average workingman's family to submit to the prolonged treatment of tuberculosis in a sanatorium, his care is but a small part of the total expense involved. Someone must provide for his family. In considering the cost of tuberculosis, this large item is usually entirely overlooked. In the Association's estimate the entire cost has been covered and the family's earnings have been deducted to get the net cost, not simply of treating the patient, but of relieving his family from distress, and of preventing the spread of his disease within his family. It is estimated that it will require about $23,500 a year for three years to determine the feasibility of this plan. It should be remembered that while the experiment is being carried on the families participating in it will be receiving adequate relief and that this will be an important factor in the plan. The families will be receiving decent care in suitable quarters instead of being treated in dirty tenements, the patients will be free from worry and wholesome food will be assured.

"We desire to emphasize that this experiment is not to demonstrate something to take the place of hospital segregation or sanatorium treatment, but to prove that even in a crowded city, given proper housing, sufficient food and sanitary supervision, it is possible to check the spread of tuberculosis, and to treat the disease with reasonable measure of success. The experiment is planned as a supplement to, not as a substitute for, the hospital and sanatorium. We do not propose home treatment in preference to a sanatorium, but for hundreds now on waiting lists and for thousands now spreading contagion in dark, dirty tenements, it is home treatment or nothing at least for years to come.

"The success of this experiment would encourage the community vigorously to combat tuberculosis in the city tenements; it would impel the community to begin the combat at once; it would convince the community that it is unnecessary to wait years until sufficient hospital and sanatorium facilities are provided before attempting in a large way to eliminate tuberculosis; it should stimulate the community to forbid the maintenance of unsanitary buildings, as well as to construct those of the same high standard as the East River homes and there to treat persons having tuberculosis without the necessity of breaking up homes or of depriving those who are able to work of the opportunity to do so, and thus to contribute as much as they possibly can to their support."

CLINICAL SOCIETY OF NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

Meeting of March 4th, 1912.

Case of Foreign Body in the Eye—X-Ray Localization—General Infection of the Eye Controlled by Urotropin.

Case presented by Dr. Earl Conner: The patient, a young man of twenty-two, called upon Dr. Conner with a history of being employed in hammering or using a chisel on a piece of cold steel. A piece of the metal flew and struck him in the eye. When seen four days later, the eye was swollen and painful; the anterior chamber was filled with pus, and on the nasal side of the globe there was a minute punctured wound about 4 mm. in size. The patient had not slept the night before. He was informed that the eye was infected and that in all probability would be lost, though every effort would be made to save it.

On admission to the hospital the test was made with the giant magnet. The result, however, was neither positive or negative. If there is a foreign body in the eye it is apt to give pain on being brought into the field of the magnet. In this case the temporal side of the eye was brought into the field of the magnet and the patient experienced sharp pain, but after a dozen trials no foreign body could be located at any point. The patient was put to bed, given atropine and hot applications of calomel.

The pupil was dilated and pus in the anterior chamber absorbed and the interior of the eye examined. A yellow reflection was obtained which was evidence of infection of the vitreous. The inflammation increased from day to day, up to the tenth day, before it was possible to control it. After the patient was put to bed he was given calomel, followed later by seven and one-half grains of urotropin, three times a day for two weeks. This drug has been administered in a large number of cases of eye infection with very favorable results. Dr. Conner said that he had had three cases of eye infection in the past few weeks in which the infection had apparently been controlled by the use of urotropin.

Skiagraphs had been made of the eye for the purpose of determining the presence or absence of a foreign body. The size of the foreign body as determined by the skiagraph was one mm. by one and one-half mm.

As a rule these cases go on to the loss of the eye. An infection of the vitreous is seldom or never arrested. The usual termination is perforation of the eye and hemorrhage. The inflammation in this instance has been controlled, the pain relieved, the patient has perception of light, and there is hope of saving the eye.

Two cases presented by Dr. C. G. Child: Operation subsequent to Gillian operation. Dr Child reported two cases operated on by the Gillian method which had returned after being operated upon. He said that neither case had been relieved by this method, and were suffering from pelvic pain with dragging on the abdominal wall and this in spite that both operations had been done by most competent men.

Dr. Child said that he objected to the operation as the intestines and omentum later became incarcerated in the pelvis. It produced pathological conditions which were worse than the original displacement of the uterus. Varicose conditions followed and an even worse state of things supervened in the formation of pockets in the pelvis.

In both of the cases he reported pockets had formed, in one of which the sigmoid was very extensively adherent and constipation had been obstinate.

Dr. Tovey said that Dr. Wells used to do the operation until he found that the patients came back with the uterus in the same position and all the troubles increased, or else they complained of pain in the side where the ligaments were attached. They had abandoned the operation.

Hematuria in a Multipara—Unknown Cause.

Presented by Dr. Ward B. Hoag: Dr. Hoag reported a case of hematuria in a multipara, forty years of age, in her fourth pregnancy. At six and one-half months she developed, without any discomfort, a considerable quantity of blood in the urine. Beyond the presence of blood there was no pain or discomfort of any kind.

The patient was put to bed, irrigations of alum solution used, and rest enjoined for ten days. It had no effect on the bleeding. She went on to full term and was delivered in a perfectly normal way. The hemorhage continued for two weeks after the child was born and then stopped as suddenly as it had begun. Dr. Hoag thought it was the result of intra-abdominal pressure, perhaps the rupture of a small blood vessel. The same night there was a little fleshy plug passed in the urine which was the only thing ever seen, and coincident with this the hemorrhage stopped and has not since returned.

Dr. Shears said that although the hemorrhage might be due to toxic conditions, in the present instance there were no signs of toxemia. Ruling out papilloma or a ureteritis, he thought that six and one-half or seven months was not too early to exert pressure symptoms sufficiently severe to produce hemorrhage. From a careful examination of the bladder and the absence of stone or other aggravating cause he should be inclined to attribute the bleeding to this cause.

SUGGESTION IN THE DRINK HABIT.

James Boyd, writing on this subject in the *Australian Medical Gazette*, remarks it is common knowledge to all of us that to drop the drink habit produces considerable suffering, both mental and physical. But that is not so by the suggestion method. The plan the author advocates is as follows: The patient is put into private hospital, or some other suitable place, for a week. If this be impossible, a friend should be at his elbow for that period, purely as a moral support. A good dose of calomel is given overnight, followed by a saline. The following day he is hypnotized (they are usually good subjects), and suggestions are then made that he loathes the taste, the smell, and the very thought of drink in any shape and form; that he now recognizes how foolishly he has been acting, ruining himself mentally and bodily, alienating the affection and respect of all, and being pointed to with scorn, behind his back, as a "hopeless waster," worthy of no one's society except those equally depraved; that from now onwards all craving for drink will have left; that he will avoid his late undesirable acquaintances and their haunts, and that physically, intellectually, and morally he will become an altered being, looked up to and respected by his fellow men, and so on in a similar strain. Before waking he is told he will be able to sleep well at night, that he will have no nervous depression or stomach trouble, and that all his weak quavering, nervous symptoms will have disappeared in a couple of days and that he will take a pleasure in and enjoy his food. He is put on full doses of Easton's syrup and digitalis. In the ordinary case, though drink be stopped from the first, hypnotics are not required, the sleep suggestion being quite sufficient. In the event of delirium making its appearance, they should be pushed. In nearly all the cases immediate response to the suggestions is obtained, and the patient has no desire to drink. The only thing left is to break the "habit" of long-standing, *e. g.*, the early morning nip and the "11 o'clocker." Hence the private hospital or the moral support of a friend. In less than a week the "habit" is broken, and the patient can return to his work without having undergone the slightest suffering. Five treatments a week for the first month, two for the second, and one for the third, afterwards one treat-

ment per month for the remaining nine, is the course the author adopts. If the patient lives at some considerable distance and it be impossible for him to attend the last nine months (the first three are where any relapse usually occurs) he is told, under hypnosis, to go to his own medical attendant, to sit in a comfortable armchair or on a sofa, to let his mind go blank, count inaudibly up to ten, and then he will be in his present condition. This entails no special knowledge of hypnotism by the practitioner, who can be given an outline of the suggestions required and use them there and then.

A great outcry has been made, especially by those who have little or no experience with hypnotic suggestion (Prof. Forel, of Zürich, the eminent alienist, states that no one is in a position to criticize hypnotic methods unless he can hypnotize not less than 80% of his cases), that it interferes with the free will. What free will has the drunkard or morphinomaniac! Undoubtedly it inhibits the desire of taking the drug, but, at the same time, strengthens the sufferer's power of resistance. Will any other known form of treatment do that? Another point. Can hypnotism cause harm? Of course it can. It all lies in the manner and by whom it is used. Those poor devils who are in more or less continual use by the showman for money-making purposes are cases in point. They develop a condition of dual or alternating personality to such an extent that they pass from one state to another without being cognizant of the change. But we do not give up the use of chloroform, for instance, because accidents have happened. The late Dr. Wetterstrand, of Stockholm, possibly the cleverest suggestionist of the day, wrote as follows: "If we are asked whether hypnotic treatment by a competent physician involves any danger to the patient's life or health, the answer must be in the negative. However, injury can result from radically wrong methods of procedure. Such is the experience in all countries. I have induced hypnosis about 60,000 times, and I have never seen or heard that anyone suffered any bad effect afterward."

CHEST EXAMINATION.

A life insurance company's medical department promulgates among its examiners the following useful reminders for thoracic diagnosis:

When Examining the Heart, Remember

1. To look for the location of the apex beat, and note any deviation from normal on the diagrams. (See examination blanks.)

2. To look for signs of interference with the return circulation, such as enlarged veins over the chest, etc.

3. To look for cyanosis, as indicated by the color of the skin and mucous membranes, finger nails, etc.

4. To detect the slightest sign of dyspnea *after exertion.*

5. To note the amount of hypertrophy, if any, on the diagrams.

6. To carefully listen at the mitral, pulmonary, aortic and tricuspid areas for murmurs, indicating location of same on diagrams.

7. To ascertain if a murmur is transmitted to the axilla or carotids.

8. To carefully listen in order to detect intermittency or irregularity in the heart's action, and differences in the length of the systoli and diastoli.

9. To look for pulsations in the epigastrium and other localities.

10. To carefully examine for evidences of arterio-sclerosis.

11. To take the pulse for *one minute* and record quality, condition of the radial artery, etc., as well as the number of beats per minute.

12. To inquire as to bleeding piles and varicose veins.

13. To inquire as to swelling of the feet and ankles.

14. To bear in mind that plethoric people with thick necks, inclined to obesity, are prone to apoplexy.

15. Procure a sphygmomanometer and take the blood pressure of every applicant when possible.

In Examining the Lungs, Remember

1. To always examine the chest without clothing.

2. To look for bulging of the interspaces, flat chest and chicken breast.

3. To note the condition of skin, whether it is unduly moist, cold or clammy.

4. To note the rapidity of the respirations.

5. To note if both sides of the chest rise and fall together.

6. To percuss for dullness from the apex beat, anteriorly, posteriorly and laterally.

7. To locate râles, describe and indicate on diagram.

8. If pulse is above ninety, and there is no apparent reason, take the temperature. (A pulse 90 or over which can not be accounted for in any other way is always suggestive of tuberculosis.)

9. To note if the voice is strong, steady and firm; to look at the mucóus membranes and observe if they are normal in color.

10. That in the early stages of pulmonary tuberculosis, cough may be absent.

11. That a phthisical applicant may have rosy cheeks.

12. To note if the clothes fit well. (It often happens that loss of weight is denied while the fit of the clothing tells a different story.)

13. To ask if he suddenly perspires during the day, and without laying apparent stress upon this incident if he answers "yes," ask if he does so at night.

14. To stand directly in front of the applicant, placing fingers just above each clavicle ask him to *inspire deeply*. If the apices are diseased, applicant will probably show evidence of pain or soreness as the inflated lung comes against the fingers.

15. To stand directly in front of applicant, placing each hand on either side just below the floating ribs, asking him to inspire deeply, and while he is so doing *press in firmly*. Tenderness will suggest pleuritic adhesions.

16. That a prolongation of the expiatory sound if uniform over the chest and not dependent upon emphysema, should not be recorded.

17. That a few crackles *bilateral*, at the base, and *not* associated with dullness are not necessarily important, but you should record your interpretations of them.

18. That as we grow older the respiratory sound becomes *harsher* and less vesicular, and may be increased in intensity or diminished. (If these conditions are uniform in an elderly person, and are not due to emphysema, they need not be noted.)

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MANAGEMENT OF STRICTURE.

Arthur Eddy West, in the *Journal of the Michigan State Medical Society*, points out that a stricture, while not a disease in itself, still is the result of disease processes and may be in turn the cause of disease processes. An inflammatory process in the connective tissue beneath the urethral mucosa, or an injury, gives rise to the formation of new connective tissue; with age this connective tissue contracts, and in contracting narrows and distorts the urethral canal. Strictures are classified in different ways and many varieties have been described, Keyes enumerating no less than seven; but the essential thing to remember is that a stricture is the result of contracting scar-tissue, and as such

should be treated. This scar-tissue, as in other localities, consists in varying proportions of white fibrous and yellow elastic connective tissue. This is important in relation to the results of treatment. If it is mostly white fibrous tissue, the stricture will be hard, yield slowly to treatment, but once stretched out tends to remain stretched. On the other hand, should the scar contain much yellow elastic tissue, the stricture dilates readily, but contracts just as readily. Such strictures may have to be cut and kept open by frequent use of sounds during the remainder of the patient's lifetime. Another thing that must be remembered is that once scar-tissue has formed it can never be completely removed. Even if the cicatricial mass is resected, a new scar forms when the severed tissues unite, and in its turn contracts and forms a stricture. So, from the nature of its cause, stricture can not be cured in the ordinarily accepted sense of the word. What we do attempt to accomplish is dilatation of the strictured parts, a stretching out of the scar-tissue, a process which generally consumes a considerable period of time. This is a fact that the patient should be made to understand, as it is by thorough understanding of his condition that his complete coöperation can be secured.

The next point to be considered is the necessity for proper instruments and their proper care. In some conditions one instrument can be made to do service for another, but this is seldom the case in the treatment of stricture. If a urethra will accommodate only a 20 F. and a 25 F. is made to do service, damage is bound to result. Better wait till the proper instrument can be secured. But the list is by no means long and every physician should have them. The necessary apparatus consists of a set of bulbous bougies for diagnostic purposes; a set of silk-web bougies, 6 to 24 F.; a set of conical sounds, 18 to 34 F.; two dozen or so whalebone filiform bougies and a few silk-web filiforms; and for the few cases when rapid dilatation is necessary, a set of Gouley's tunneled sounds. Some convenient means of sterilization should be provided convenient, because many of us are prone to slight those things that are troublesome. Some good lubricant should always be at hand, and there are several on the market. Glycerin is not slippery enough, and vaseline is too sticky, besides causing a rapid deterioration of silk and rubber instruments and making them more difficult to sterilize. Some means of irrigating the urethra is also necessary. Personally, the author finds a 150-gram Janet-Frank syringe meets every requirement. It is perhaps needless to say that urethral instruments need the best of care. Steel sounds corrode easily and the bougies, if not properly cared for, soon crack and roughen, and once this takes place they should not be used. A rough instrument is sure to cause damage. The sounds, after being sterilized, should be rinsed in alcohol, wiped dry and kept in a dry place. All silk instruments should be thoroughly cleaned, sterilized in formaldehyde gas, wrapped in dry sterile gauze and kept in a dry place; they must be laid out straight, as coiling soon ruins them. The author remarks in passing that soft rubber catheters, if wrapped in moist gauze and kept in a dark place will remain good for two years and over.

DIET IN HYPERTENSION.

Elliott, in the *Therapeutic Gazette*, regards high blood pressure as a reaction to some form of systemic toxemia.

Whether the case be primarily nephrotoxic, autotoxic, or chemotoxic the blood-pressure elevation is probably produced by the circulating toxins. Certain secondary organic changes—arterial fibrosis and cardiac hypertrophy—follow as a matter of course from overfunctioning of the cardiovascular apparatus, due to the altered mechanical conditions in the circulation. This fact of etiology being conceded, it follows that the first prin-

ciple of treatment is to prevent the formation and absorption of pressor toxins. Failing in this their removal becomes the next important object of attention.

1. Reduction in the total quantity of food. The extent to which this is carried must of course be governed somewhat by the physical type, habits and activities of the individual. Digestive plethora is, however, the rule with these patients.

2. Limitation of protein. In arranging the diet for all hypertension cases of whatsoever origin the amount of protein food should be restricted within certain limits. The average adult does not need for physiologic purposes more than 90 grams of protein per day. In every case of hypertension the protein should be kept within this amount. In renal cases of high blood-pressure the amount ingested must be limited to what the kidneys can take care of.

3. Milk diet. An exclusive milk diet is not appropriate for routine use in arterial hypertension, even when the case is one of chronic nephritis. Leaving out of the question important individual considerations, it is poorly adapted to care for the nutritive needs of the patient. In order to supply the requisite number of calories it is necessary to give at least three quarts of milk daily. This quantity of milk represents 120 grams of protein, which is at least one-third more than should be allowed in the average case.

4. Fluid restriction. The amount of fluid drunk does not materially alter the blood-pressure so long as the heart is functionating adequately. The extent to which the fluids are to be restricted should depend on the ability of the kidneys to remove water from the system. High tension is not uniformly accompanied by active urine excretion.

5. Salt restriction. Certain care in this detail is advisable in high pressure cases. In strictly limited amounts salt will do no harm in cases with good cardiac function, and as it adds greatly to the palatability of food it may be permitted within certain limits. In excessive amounts salt is a circulatory stimulant, and as it increases tissue lymph and adds to the viscosity of the blood it tends in consequence to raise blood-pressure. It is well in all cases to instruct patients to avoid the use of salt on the food after it is cooked and served. If edema, however slight, is present, salt should be excluded entirely from the diet.

In closing this brief discussion of physiologic measures for the control of high blood-pressure reference should be made to the psychological treatment of these patients. As a rule they are a highly strung, nervous type of invalid, exceedingly susceptible to suggestion. They are easily encouraged, very easily depressed.

THERAPEUTIC VALUE OF LUMBAR PUNCTURE.

The diagnostic value of lumbar puncture has been firmly established, but its therapeutic value is not so generally known. Curschman always punctures with the patient lying on his side instead of sitting up and introduces the needle laterally. For diagnostic puposes, 8 to 10 c.c. should be withdrawn; for therapeutic purposes enough to restore the normal pressure of 120 to 150 mm. water. Lumbar puncture is indicated in all cases of acute and chronic meningitis, meningismus and non-inflammatory increase of fluid. Really marvelous results are seen in the so-called serous meningitis, no matter whether the fluid is normal or contains more albumen with lymphocytes in the sediment. The condition is analogous to edema in other parts of the body and is often cured by a single puncture, though the patient's condition may appear very alarming. Meningitis due to influenza is often cured by puncture and the same may be said of meningeal inflammation following erysipelas, though streptococcus meningitis, secondary to ear trouble, is less favorably affected, and the epidemic type of the

disease usually also requires the injection of serum. Irrigation of the spinal canal with sublimate solution has been recommended in cerebro-spinal syphilis. The results are least satisfactory in tuberculous meningitis, though a few cases have been reported cured. Some brilliant results have been published in internal hemorrhagic pachymeningitis. Lumbar puncture has also been tried in a variety of other affections, such as gastric crises, chorea, epilepsy, tetanus, incontinence of urine, Meniere's disease, itching dermatoses, etc. The author could see no good effects in uremia, probably because the exudation is cortical and parenchymatous. The small operation is usually harmless, yet care is in place, particularly in nervous and hysterical patients. There is only one condition where lumbar puncture is serious and may be followed by sudden death, namely, in tumors of the posterior fossa. The high pressure will drop suddenly and the patient may become deeply cyanotic and cease to breathe while the heart will continue to beat for some time. The tumor is usually in the cerebellum or in the neighborhood of the aqueduct, and the fall of pressure resulting from lumbar puncture will force it against the foramen magnum or fourth ventricle. In rare cases, there may be hemorrhage into the tumor.

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BROMIDES IN EPILEPSY.

Collins, in the *Journal of Mental Science*, says that the effect of the bromides is variable, some patients being quite unable to do without them, while others can not take them in any form, even when salt is eliminated from the diet and the dose is small. The author believes that the epileptic fit is reflex in origin, and that the bromides act by raising the resisting power of the brain-cells to external stimuli. For this reason their use is always fraught with danger to the mental activities of the patient, and one can not help wishing that the bromide treatment was less extensively used during childhood. He has noted the following bad effects from bromides: Great physical reduction, hallucinations, malaise, stupor, degraded habits, edema and cardiac debility, a general lowering of the resisting power to disease, so that sudden changes in the temperature are very likely to be followed by bronchitis and pneumonia. On the other hand, in chronic epileptics who have been on bromide for many years the omission of the mixture has in many cases been followed by one or more of the following results: Increase in the number of fits, and also in their severity. Two cases sprained an ankle during the fits, and in one ecchymosis of face and neck occurred. Attacks of mania, and a greater degree of malaise following the fits, also were noted. In one case, a female who had been taking strontium bromide gr. xxx twice daily for several years, the bromide was omitted because she had an attack of pleurisy with effusion. A slight increase of minor attacks occurred as she got better, but after getting up and when convalescent she had 129 minor attacks in a week. Potassium bromide gr. xxx twice a day stopped these very soon. A few cases are quite uncontrollable without bromide from mental excitement, contradicting some who are more irritable when they have no fits. In several cases no evil results have occurred, but physical and mental benefit have ensued.

In some cases bromide abolishes the aura of the fit, and causes the patient to fall and injure himself in a way he did not do previously. In two cases with prolonged aura the writer has been able to avert fits for several months by simply giving a dose of bromide as soon as the aura is noted. In very many cases in which an immediate cessation of fits followed the exhibition of bromide its effect wears off, and the fits gradually begin to recur, and then a change of bromide will sometimes again cause

a cessation of fits. He finds little difference in the two salts he has used principally, viz., strontium and potassium, except that from one-half to two-thirds dose of the potassium seems to have the same effect as the larger dose of strontium.

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HOPE AS A THERAPEUTIC ASSET.

The *American Practitioner* descants upon the virtue of hope as a factor in treatment. Take hope from man and he is poor, indeed. There are none without it to a greater or less degree. He that has every reasonable wish gratified still hopes for something more—greater wealth, better health, rest or freedom from care. None but who look forward to the accomplishment of the heart's desire. The person without something to hope for will of necessity be narrow, selfish, and egotist. It is hope that gives zest to life; that buoys us up, makes us rich in anticipations for the morrow. Without hope the future is a blank; with hope, cheerful, bright, something for which to strive, to relieve the tension of effort. The child is full of hope for a happy future; the youth, for a brilliant career; the man, for a competency, or later for quiet and pleasure with health; the aged, for a happy future. We have our desires while in good health, hope accentuated in sickness. Here it is the agent par excellence that helps to recovery; nor is it alone the individual's hope for recovery, but hope must radiate from all who come in contact with him. Especially is this needed in the sick room. It will often accomplish more in bringing about recovery than mechanical agents.

It is a pity that hope among other like agents is not treated of in our works on therapeutics or practice. If carefully studied and applied, it would prove of inestimable value to the physician. But all men are not qualified to administer it in the manner and at the time when most needed, or when apt to be of the greatest benefit. It will be impossible for the pessimist to diffuse it, for he is usually without it himself or has none to spare. To such a man organic diseases of the heart, for instance, or tabes, cancer, tuberculosis, are not amenable to treatment, and the patient is led to believe, by inference or otherwise, that there is no hope. While to the optimist "Hope springs eternal," and the patient is inspired to make the fight for recovery, or at least improvement. Let our teachers point out the benefit of hope, and let it be dwelt upon in our text books. "The miserable have only hope," and hope has safely carried many a man over a crisis, both in health and disease.

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TREATMENT OF DIABETES.

Hodgron, in the *Journal of the A. M. A.*, thus enumerates the objective points in treatment:

1. To free as nearly as possible the blood and other tissues from sugar; to do this it is necessary—

2. To find the individual patient's tolerance for carbohydrate and if possible to increase that tolerance.

3. To find a diet that will furnish the necessary calories without at the same time increasing the sugar intake.

4. To prevent, by dietetic or other measures, the constipation with which the majority of these patients suffer and which increases the toxemic condition.

The first thing to impress on the patient is the fact that this disease—in the class of cases under consideration—is one that possibly has been years in developing, and that it is useless and hopeless for him to expect to obtain any relief in a short time. The changes which a long-outraged system has undergone are such that can not be remedied in a week or a month. In diabetes, more than in almost any other disease (unless it is tuberculosis), the help and co-operation of the patient is absolutely essential to successful treatment.

Another fact to be emphasized is the futility of drugs in the treatment of this disease—futile, because harmful habits can not be cured by drugs. A large percentage of the patients who present themselves bring with them their bottles of codeine. It is an unfortunate fact that many physicians still seem to harbor the belief that arsenic possesses virtues not to be found in the official preparations, and, moreover, that it has lost the dangerous qualities inherent in it. The author states that he has seen so many patients with the codeine habit and aggravated cases of constipation superimposed on the diabetes, and so many with wrecked digestive systems due to the long-continued use of arsenic solutions, that he utters a word of warning against the employment of these drugs.

Codeine and arsenic may have their uses in a limited number of cases, but in the great majority they should be left severely alone. If these drugs were merely worthless, there might not be any serious objections to their use, but they are a positive detriment, and their continued use lessens the patient's chances of recovery. Not only that, but whenever a drug is given to a diabetic he is usually less careful in his method of living than if he realizes that his recovery depends on diet and hygiene alone.

PERITONEAL ADHESIONS.

Richardson, in *Annals of Surgery*, thus summarizes a study on this subject:

Peritoneal adhesions are of two kinds, those which are useful and those which are harmful and dangerous. It is futile to search for some agent that will banish adhesions from the realm of abdominal surgery, inasmuch as the processes involved in their formation are identical with those involved in peritoneal repair.

In dealing with peritoneal adhesions, the surgeon has recourse to three classes of procedures: (1) measures which prevent their formation; (2) measures which restrict their formation to the harmless variety; (3) measures which aid in their absorption.

Certain anatomical and physiological characteristics of the peritoneum have an important bearing on the problem of peritoneal adhesions; notably its extensive area, its remarkable absorptive power and ability to successfully cope with infection, the variable sensibility of different portions, the continuity of its endothelial surface, the rapidity with which it can form adhesions, and the completeness with which it can later absorb them.

Injury or death of the highly vulnerable surface endothelium is sufficient to set in motion the chain of pathological events which may terminate in dense adhesions.

Etiologically, there are a number and variety of factors involved, but they can all be grouped under the two heads—sepsis and trauma.

As specific prophylactic and curative measures, emphasis should be given to: (1) rigid asepsis; (2) the use of moist hot gauze; (3) careful covering of all raw surfaces; (4) avoiding unnecessary exposure; (5) restricting trauma; (6) gastroenterotomy and enteroenterostomy; (7) returning the viscera to their proper anatomical relationship; (8) spreading out of the omentum over the visceral surfaces before closing the abdomen; (9) careful closure of the peritoneum. A number od additional safeguards are available which have been tested and proved to be of value under certain conditions. The most reliable of these for general use are: (1) viable grafts of omentum or peritoneum; (2) lubricants; (3) judicious ante- and post-operative therapy—especially with reference to posture, catharsis, enemata, and length of stay in bed.

The field of specific chemotherapy offers the brightest hope in future progress.

Success in the management of the more aggravated adhesion case depends largely upon accurate clinical diagnosis,

followed by intelligent operative procedures.

In properly selected cases, the use of adjacent mesentery for covering raw bowel surfaces offers distinct advantage over all methods hitherto proposed.

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TREATMENT OF MISCARRIAGE.

Young and Williams, in the *Monthly Cyclopedia,* present the following conclusions from a study of two thousand cases:

1. Spontaneous emptying of the uterus takes place in but about 13.2% of all miscarriages.

2. The likelihood of a miscarriage to complete itself increases with the duration of pregnancy.

3. When it becomes necessary to use artificial means to complete the miscarriage, the use of the finger followed by the curette in later miscarriages, and of the curette alone in earlier months of pregnancy, has given uniformly satisfactory results.

4. Experience has shown that where the cervix is extremely rigid it is better to introduce the curette and break up the fetus and placenta and remove them piecemeal than to attempt to dilate the cervix sufficiently to introduce the finger.

5. Packing the vagina and lower uterine segment is an unsatisfactory and often unsuccessful method of emptying the uterus. No success whatever was obtained in treating incomplete miscarriages in this way.

6. Packing is, however, of great value in two classes of cases: First, in exsanguinated patients, to stop the hemorrhage and give the woman a chance to recover somewhat from the loss of blood before emptying the uterus. Second, when the cervix is very rigid, a tight cervical pack for twenty-four hours will soften it so that dilatation may be attempted with safety.

7. The results of artificial methods are as good as, but not better, than where nature has succeeded in emptying the uterus.

8. Artificial methods are necessary in a majority of cases, however, simply because nature has failed.

9. In infected cases the essential thing is to get rid of the infectious material by emptying the uterus.

10. The later in pregnancy miscarriage occurs, the smaller the liability to become infected, but the greater the likelihood of developing grave septic complications if infection does take place.

11. The mortality is practically the same at all periods of pregnancy.

12. Induced abortions have a greater mortality than accidental. The mortality of patients admitted to the hospital after criminal abortions was 10%.

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HODGKIN'S DISEASE AND TUBERCULOUS ADENITIS.

Melland, in the *Edinburgh Medical Journal,* says that tuberculous adenitis, though in its early stages particularly amenable to medical treatment, is a condition which is liable to drift into the hands of the operating surgeon. The complete removal of the glands is a speedy and direct route to results which other methods attain more slowly. Operation in Hodgkin's disease is always unsatisfactory and in some cases disastrous. In advanced cases of Hodgkin's disease, there is almost always a severe grade of anemia, though in the earlier stages often little or none. The distinctive feature is a diminution in the number of leucocytes with a relatively high proportion of lymphocytes. With a case with enlarged glands, in which the temperature, after keeping quiet for a while, suddenly begins to rise, suspect Hodgkin's disease. The temperature in tubercular adenitis is either normal throughout or else shows the regular hectic character of tubercular infection, and never takes on this recurrent type. Calmette's ophthalmic tuberculin re-

action is of value in differentiating these affections.

FORMS OF VERTEBRAL RHEUMATISM.

Regnault, in *Progrès Médical*, describes two forms of rheumatic disease of the spine, the osteophytic and the rheumatoid. In the first form there is an overgrowth of bony osteophytes which causes ankylosis of the bones of the spinal column, since the osteophytes overlap the intervertebral cartilages. The articular apophyses are deformed and bony growths cause intense pain through pressure on the spinal nerve. This condition is common in adult and advanced life. Deforming rheumatism causes a kyphosis of a uniform but irregular arc. The articular ankylosis comes from ossification of the interspinous and supraspinous ligaments. The articular ligaments of the apophyses especially are ossified. Horses have the same forms of rheumatism that are seen in man.

THOUGHTS OF AN ELDERLY PHYSICIAN.

1. Care for as you would be cared for.
2. A good physician is one who can individualize.
3. Never show anger towards a child.
4. Show to the patient that you perceive the *why* of his ailment, but do not render him as wise as yourself.
5. Go, when the patient requires you, but do not go beyond his desires.
6. Treat a question in detail: A massage may be measured by the proportion of talc expended.
7. A doctor in a vehicle never looks like a fool.
8. Always remember, by the bedside, that you have treated a similar case and that you relieved your patient.
9. Everybody requires a miracle, a sick person most of all.
10. Make people understand frequently that your conception of your profession differs from theirs.
11. Take any payment when offered (adds the French monitor). It is customary in England, and English people are acquit of false sentiment.
12. In regard to your fee, remember that people will weigh your science in proportion to the number of dollars you receive.
13. It is never permissible for a doctor to be in a hurry except in the midst of an operation, or when he finds a patient sleeping.
14. Never explain to a wise patient: you may thereby conflict with his ideas and his theories of treatment.

TIC SALAAM.

The tic salaam is a rare condition. As Cenzi reports a case in an infant two and a half years of age. At the age of nineteen months, when dentition was well advanced, the infant began showing the attacks of inclination of the head, with fixation of the eyes. These attacks were repeated from two to ten times a day in about two minutes. Accompanying these attacks there was general rigidity of the body and a mental distraction. Neurological examination of the infant was negative. The attack ceased under bromide treatment. The author considers that this case was epileptic in nature. He discusses also the possibility of spasms of inclinations of the head being due to infectious diseases, dentition, rickets, brain tumor and reflexes from labyrinthine disease.

THE SCAPEGOAT.

Teacher—"I shall not keep you after school, Johnnie. You may go home now."

Johnnie—"I don't want ter go home. There's a baby just come to our house."

Teacher—"You ought to be glad, Johnnie. A dear little baby——"

Johnnie (vehemently)—"I ain't glad. Pa'll blame me—he blames me for everything."—*Lippincott's Magazine.*

THE DOCTOR HIMSELF.

CLINICS AT BUDAPEST.

McMORROW, in the *New York Medical Journal,* gives an interesting description of this European medical center. Budapest, he reminds us, is situated on the beautiful blue Danube, about 150 miles southeast of Vienna, has a population of nearly one million, and is fast becoming celebrated for the number and character of its educational institutions. The Hungarians have made wonderful progress in the last thirty years, especially in the science and art of medicine and surgery. Their hospitals are nearly all modern buildings, well situated as regards light and air, with pleasant surroundings, and well equipped with the latest and best appliances for X-ray, laboratory, and pathological and clinical work.

I was connected, says the author, with the second of the two gynecological hospitals, which are a part of the Royal Hungarian University, and can speak from practical experience. The hospital contains 150 beds, half of the building being devoted to the gynecological cases and the other half to obstetrics. There is a separate building for septic cases and one for dispensary cases. In the latter department from forty to fifty patients are examined and treated every morning from 8 to 11 o'clock.

In the obstetric division, from six to eight women are confined daily, and one can see here in a short time the various abnormalities of the pelvis and any number of difficult labor cases, ranging from forceps operations to the extraperitoneal Cesarean sections. A great many cases of craniotomy were performed during my residence there, as it is their conclusion that where there is no question of the death of the child *in utero,* in case of contracted pelvis, it is far better to open the head and deliver the child easily with a cranioclast than to apply the forceps to the head at the superior strait and subject the mother to the delay, pain and danger of a prolonged forceps operation, when nothing is to be gained by it.

In post-partum hemorrhages, Momburg's method is used to control the hemorrhages. In the cases in which it was demonstrated in the clinic, it was successful with the exception of one case, the patient being *in extremis* when she arrived. The case was one of accidental separation of the placenta, the patient having been flowing profusely prior to her admission. Version was quickly performed, but when the belt was applied the patient was pulseless and died soon after its application.

The method of its use is as follows: A good, strong rubber gas-tube, about five yards long, having about the thickness of the index finger, is passed through under the back of the patient, to be grasped by the hand of an assistant who stands at the other side of the operating table. The tube is stretched to the utmost, and is passed by the surgeon around the abdomen, two turns being sufficient in slim individuals. In stouter patients it sometimes requires four or five turns, sufficiently to compress the circulation, which can be ascertained by noting the cessation of the femoral pulse. When a patient is fairly anemic the obstetrician resorted to Trendelenburg's posture, and where the anemia was of a serious character, both extremities were bandaged with elastic bandages from the toes up.

For any physician wishing to do post-graduate work in gynecology or obstetrics this place has a great many advantages over other large European cities. Every opportunity is afforded to make the examinations, treat the patient, and follow the case from beginning to end.

The supply of material is unlimited, and the number of physicians coming here for work is not so large as in some other medical centers, so that one can have plenty of opportunity to work along the lines most desired.

Emergency cases are treated, when practicable, at the homes of the patients, and at least from twelve to fifteen new patients are attended daily. Even in the poorest of homes, the most wonderful results are obtained, and seldom is there a case of infection following confinement or miscarriage, as the asepsis is the most thorough and rigid that could be put into practice.

In the gynecological division there are two main operating rooms, which are of modern construction and contain all improved methods. An apparatus devised by Roth, in which the exact number of drops of ether and chloroform can be measured, and in which oxygen is given at the same time, is used for anesthesia. Most of the operative work is done by the abdominal route after the method of Wertheim. No soap or water is allowed on the abdomen, but the skin is hardened by an application of equal parts of acetone and alcohol, after which tincture of iodine is applied. All sutures used are catgut, treated with iodine after the Billmann method.

They are having considerable success in the treatment of annexa tumors by the method suggested by Professor Zweifel, of Leipzig.

Obstructive dysmenorrhea is treated by a posterior incision of the cervix, inserting a Bossi dilator, leaving in for two weeks, the patient remaining in bed for eight to ten days. They assert excellent results by this method.

I saw, during my service in the clinic, a great many cases of induced abortion, especially in tuberculosis. Where there are the slightest evidences of tuberculous infection, the assistant does not hesitate to inject into the uterus from ten to fifteen c.c. of alcohol, which is found to be effective. Sometimes a second and third injection is necessary. An alcoholic solution of iodine was used, but this was found to cause considerable pain when it penetrated into the tubes, so they discontinued using it.

One of the pleasantest recollections of my life will be my association with the men of the women's clinic of Budapest. Having lived in the clinic as I did, and being closely associated with them in their work, I learned to know them as a hard-working, sincere lot of men, men of experience, displaying great skill and some doing original work of a high order. To the assistants, Scipiades and Frigyesi, I shall ever be grateful for their many acts of kindness and the personal interest shown me during my residence in Budapest, and also to the other assistants who contributed so much to make my stay one long to be remembered.

DUTY OF PHYSICIANS TO EACH OTHER.

Arthur J. Huey, in the *New York Medical Journal,* regards all physicians as partners, and asks us to consider the duties that we owe one another as partners. If a partner is doing his work conscientiously one has no right and should have no wish to interfere with his success, either directly by assuming charge, or as is so often done by indiscreet and meddlesome gossip with his patients concerning his treatment and the results obtained—often criticising with only the slightest knowledge of the case and the difficulties with which he has had to contend. Rather should we uphold one another, remembering how often our own best efforts fail, and even the results of which we are justly proud are misinterpreted and criticized.

If a partner finds himself in difficulty and asks for help, it should be given, freely and generously, aiding one another with our varied experiences and observations. If he has been wrong we

may advise and instruct, if possible, but whenever we disagree do let us keep it among ourselves, remembering that not only the success of the individual, but the success of the whole profession rests primarily on the confidence of the patient and the community. Our president remarked at the last meeting that the physician did not hold the confidence of his patients today in anything like the degree that he did twenty-five or thirty years ago. The author believes the cause may be found right here. In the great mass of knowledge and theory brought before the profession during that time it was inevitable that differences of opinion and arguments should occur, but we have made the mistake of carrying our disputes with us to our patients, resulting in a loss of confidence, the handicap of which we have all been made to feel. If a partner has been wrong and erred through ignorance, we may privately instruct him if we can, and if possible bring him to a better understanding of the case at hand. Even if his mistake is one of carelessness, unless it is flagrant and repeated, we may admonish in private, but should refrain from outside criticism for the protection of ourselves and all the other members of the great partnership. Only when by repeated offenses of carelessness and self-seeking, a physician proves himself unworthy of his profession, does the duty of his fellow physicians to the public demand that they disown him and his methods, and that he forfeit his right to partnership.

In all this let none of us think too highly of himself and his attainments. Today we may play the rôle of counselor and consultant and tomorrow we may seek counsel and be glad to find help in some difficult problem that confronts us.

The practice of concealing our differences of opinion from the patient is often criticized as a deception practiced on the public for the good of the profession. But, "When doctors disagree, who shall decide?" Surely not the patient, and Lord deliver us from the patient's friends! The truth is that a layman is in no way fitted by training or experience to understand the problem. Settling our disputes in private is a duty that we owe to one another, that has been honored from ancient times, and in no other way can we retain the respect of the public and present a solid front against all forms of quackery and all those who would exploit the sick and suffering for their own gain.

Medical treatment of a fellow physician and those dependent on him without compensation should be classed as a privilege rather than a duty. Such a call for personal advice and medical or surgical aid is the most sincere praise that one physician can give another, and is a call which has always met with a generous response from medical men.

All this we owe to one another as partners in a common cause. On the other hand, we may consider physicians as also related to one another as competitors, and, so considered, we owe the duties of an honest competitor. Most of us are competing to earn a living. The task is not an easy one in this great city, and some must fail. Let it not be because of unfair competition from those who succeed—lowering of recognized standards of fees (painfully low as they already are), unjust criticism, and similar practices too often apparent. We are also competitors for places of trust and honor in hospitals and teaching institutions. Though we all know that these positions are seldom the reward of unassisted merit, but are obtained through the keenest competition and rivalry, let not the merit be lacking, but by constant study and application may we all be worthy of whatever recognition is given to us and be ready to fill a higher position when it may come.

PROGNOSIS.

Physicians, says James R. Maxfield in the *St. Louis Medical Review*, are far from infallibility. All their patients do not get well; neither does absolute knowledge upon any subject exist, while every conception or theory or viewpoint represents some relative phase of truth to be determined by individual experience.

In many diseases an exact prognosis is not always possible, but those cases that are amenable to treatment, either curative or palliative, are benefited by a favorable prognosis just in proportion as the bodily functions, both voluntary and involuntary, are encouraged into activity. No possible harm can come to the individual by a favorable prognosis, while all other sane, sensible, therapeutical means are, of course, not to be neglected. It will never be possible for even our most expert diagnosticians to give an infallible prognosis in all cases against the determined and persistent efforts of the truly ambitious physician who will stand out with all odds against him and fight for the recovery of his patient with every available therapeutical resource. Then in all cases let us give the patient the benefit of the doubt and help him to get well.

There are many fatalities occurring daily all over our country for the lack of men with faith in this medicinal factor and courage and moral stamina to stand out for the recovery of his patients. A number of times in my life has it been my unpleasant duty, still a great privilege, to have an opportunity to stand by a patient in the face of a positively unfavorable prognosis made by those who did not appreciate the great power of prognosis on the recovery of his patient, and after a thorough physical examination I would take the patient by the hand and tell him while he was real sick, but he was going to get well, I could see the radiant smile play beneath that saddened countenance and have heard them say, "I will get well if you will come to see me."

I believe that many human lives could be saved by this simple favorable prognosis given with confidence and with conviction in connection with all therapeutic measures.

Here I would add a word of advice. It is a great mistake to tell a patient that there is nothing serious the matter with him. Almost as bad as to exaggerate the seriousness of his symptoms. Any individual with any true acute or chronic disease is conscious of it.

The patient should be made to feel that he has your confidence and sympathy as well as the benefit of your knowledge and skill as a physician. Then you are in a position to help to execute a plan of treatment that will bring about prompt recovery.

It has been a matter of observation to see physicians so utterly lacking in this one fundamental principle of medicine that they are unable to wield an influence for good with their patients. In the eye of the general public an error in prognosis is the unpardonable sin. They never know if you make a failure in diagnosis or treatment and if they find out later that you had erred in either, they will forgive and soon forget, but when you have told the family that death is inevitable and your patient falls into the hands of a competitor who has confidence in the therapeutical value of a favorable prognosis, combined with a rational scientific treatment, and your patient gets well, your name is handed down for generations to come.

The true, ambitious, wide-awake physician faces the problems of his patients with impartial and impersonal courage, and with the tenderness of one whose own heart has felt the pressure of these tremendous questions; one so full of love and sympathy for his fellow man, full of cheerfulness, full of strength and optim-

ism, and full of helpful hope, that he can move on human life as stars move on the "dark seas of the bewildered mariners."

Whatever be our deficiencies as a result of heredity, environment, and education, each of us can give our patients of our highest, truest and best self as an aid to their recovery.

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MAGIC AND SORCERY.

Le Progrès Médical for February 4th contains a most interesting article by M. Ch. Esmonet on the third volume of M. Th. de Cauzons's well-known book, "La Magie et la Sorcellerie en France." In the preceding volumes, the author has sketched the history of sorcery in France and from its earliest origin throughout the Middle Ages, and the present one gives an account of its growth and progress from the Reformation to the Revolution—that is to say, during the sixteenth, seventeenth and eighteenth centuries, *l'âge de la Sorcellerie par excellence,* as M. Esmonet calls that period. *The British Medical Journal* comments on the curious fact that, in spite of the ignorance and credulity of our medieval forefathers, the belief in "magic and spells" was never so general as at the time when the medieval faith was being gradually replaced by the worship of philosophy and reason. During these three centuries there was a widespread epidemic of witchcraft, and thousands of unfortunate people were sacrificed to the insensate terrors of an ignorant populace. This, by the way, was the case not only in France, but in England and Germany, where popular belief in the supernatural powers of the magician was even more firmly rooted than in the former country, whose inhabitants lived in a constant state of excitement over such events as the trial of the Dominicans at Berne, the history of Madame de Brinvilliers and the possessed nuns of Loudun. The culminating point was reached during the reign of Louis XIV, when the number of deaths from poison attained such proportions as to force the clergy to warn their congregations from the pulpits, as to the enormous number of confessions they were in the habit of hearing from men and women who had got rid of enemies by this summary process. As M. Esmonet points out, however, at this period the Black Mass and its attendant horrors were no longer a question of superstition pure and simple, as at an earlier date, but were used from motives of vengeance or personal gain. The eighteenth century, credulous as it was, witnessed a change in the popular attitude towards sorcerers, who were no longer treated as criminals but as lunatics. A proof of this more humane view is afforded by the treatment of the convulsionists of Saint-Médard, who chose the tomb of Deacon Paris as a fitting spot for their outburst of frenzy. The King ordered the cemetery to be closed, and the majority of the convulsionists were allowed to return to their homes, only a few being kept under lock and key until they regained their senses, or became definitely insane. A little later Mesmer caused a transformation in the whole scheme of sorcery which was entirely in keeping with the rationalistic tendencies of the age. Magic became a "science," which was to lead not only to the cure of all human ills, but to the solution of the problems of the universe; and scores of men, both honest and dishonest, gave their lives to the study of the phenomena connoted by the term *la grande névrose*. In the latter category M. Esmonet instances that prince of quacks, Cagliostro, whose life was surely one of the most extraordinary on record and who undoubtedly owed his escape from the torture chamber and the scaffold to the fact that he flourished during the reign of Louis XVI instead of two hundred years earlier. It is saddening to reflect that, in spite of our boasted progress, there is as much superstition (though of a different kind) rife today as in the time of "le roi Soleil" and the

infamous vendor of poisons, Madame Voisin.

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THE COUNTRY PRACTITIONER.

There is probably no member of the medical profession, says the *St. Louis Medical Review*, who deserves more praise, does more work, and receives less reward, than the country practitioner. He is the one who is called upon to treat all the ills to which human flesh is heir, and he is required to travel where no one else can, and to do it in weather that no one else would brave. He not only does this unflinchingly, but with pleasure. He does not bemoan his lot. Far from it. He rejoices when one of his patients pays an account on his bill, years after it his been rendered, in the form of a shoat or of a few bushels of corn. Of course, these are handy, and so is a young horse, if he can get it. He is not only called upon to see and examine cases of illness but he must needs furnish the medicines, and here enters a new question, that of obtaining money to pay for his drugs. So that the *modus vivendi* is more than a merely diplomatic question with the country practitioner. It is true, on the other hand, that he has plenty of pure, fresh air to breathe, and he becomes a strong, healthy, stalwart man. Physically, he has all the advantage, and he is mentally as keen, alert and observing as he who lives in the city and breathes smoke and inhales the noisome odors which are always associated with agglomerations of crowded houses and penned-up human beings.

Some have an idea that country practitioners are ignorant and they are the ones who never had the good fortune to be intimate with them or their mode of life. Now that the farmer is succeeding in making some money his doctor shares a part of his prosperity with him. The country practitioner and, of course, this includes those in small towns, has a good comfortable home, has the best of food and displays a general air of prosperity which is to be envied. His office is divided into a waiting room, a private office and a drug store. He may, as we have had occasion to see many a time, have a good static machine by which he is enabled not only to examine patients with Röntgen rays, but to treat them as well. What has struck us the most favorably as well as forcibly in country practitioners is the fact that every one, or nearly every one, has a good medical library of the best leading authors and subscribes to the best medical journals, which he reads.

These are not the only praiseworthy traits of the country practitioner. As a rule, he is a member of his county or district medical society and an active contributor to its proceedings. He is a faithful attendant upon his State medical association and a very good listener, as well as an occasional contributor. His chief purpose and aim is to learn, whilst that of his city confrère is to make himself known. The former is a very laudable purpose and should be encouraged. Of the latter we can say naught but words of praise. Let the country practitioner keep on his course and always keep in mind the high achievement of a country practitioner, the famous Dr. Ephraim MacDowell, the father of modern ovariotomy. This, alone, should make him feel proud of being a country practitioner.

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MISTAKEN IDENTITY.

"Mary," said the head of the house one morning, "I called Jimmy four times and he didn't answer, so I turned down the covers on his bed and gave him a good spanking."

"Oh, John, how could you? That means I'll be hunting for a new cook!"

"How's that?"

"Jimmy stayed all night at Smith's and the cook slept in his bed last night."—*National Monthly.*

THE SICK ROOM.

MEDICAL NURSING—LECTURE No. 5.

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Dyspepsia.

WE spoke of dyspepsia caused by functional changes in the stomach. We will consider now the dyspepsia due to a derangement in the functions of intestinal digestion, so-called intestinal dyspepsia, caused by defects in the pancreatic, biliary or intestinal secretions, or from deficient peristalsis. It is characterized by abdominal pain, distention and tympanites, developing latter some hours after meals; nervous depression, anemia and emaciation.

Causes of this dyspepsia are improper diet, over-eating, deficient exercise, worry, immoderate use of tobacco and liquors. Dyspepsia is the result of diseases of the stomach, liver or pancreas. It is met in many constitutional diseases, is frequently inherited, and we meet many members of the same family who are born with so-called weak stomachs or weak bowels. It will mean to us that the functional energy of the organ is below par.

In acute forms of intestinal dyspepsia, the patient complains of pains in the abdomen, flatulency, distention, has a little fever, coated tongue, no appetite, headache, pains all over and usually a mild attack of diarrhea. This acute indigestion accompanies acute catarrhal inflammations of the duodenum extending to the biliary tract and presenting jaundice with light colored stools and high colored urine.

The chronic variety results from greater or lesser decomposition of a partly altered food passed from the stomach; pain which is varying in character occurs from two to four hours after the meal, and is located in different parts of the abdomen, which is distended and tender on pressure. Tympanites is the result of the accumulation of gases from the decomposed intestinal contents. The diaphragm is pushed upward causing dyspnea. The absorption of gases and toxins, ptomaines, as a result of fermentation and putrefaction, produces a whole chain of nervous symptoms due to what is called autointoxication. Mental depression, hypochondria, sleeplessness, disturbed dreams, vertigo, headache, numbness and tingling in the extremities, pains over the whole body, are frequently met in patients suffering from intestinal dyspepsia. Bowels sluggish or constipated; the urine highly colored, leaving deposits of salts after standing. If the disease continues for a long time, a secondary anemia and general debility follow. The treatment in the acute variety consists in the administration of opiates to stop pain and in cleansing the intestines by the administration of a laxative. The selection of such depends upon the character of the case and condition of the patient.

In the chronic form our main attention is to be directed to the diet which should be restricted in amount and confined almost entirely to articles of food which are readily digested in the stomach and are not liable to undergo putrefactive fermentation in the intestines.

If there is reason to believe that the secretion of one or the other abdominal glands is deficient, we can substitute this deficiency by the administration of drugs, containing the ferments or active principles of these glands. For instance, we may give pancreatin or purified gall where we suspect a deficiency in the liver or pancreas, or we prescribe drugs which increase the activity of the liver like sodium phosphate. We order papoid to

substitute intestinal digestion. We also prescribe drugs whose action we believe consists in arresting the processes of putrefaction and fermentation, so-called intestinal antiseptics, like salol, naphtholin, salicylate of sodium, etc. Of course, we must provide for a regular evacuation of the bowels. Constipation will aggravate the symptoms. We order mineral waters or salts. At times laxatives of the vegetable group.

Intestinal Colic.

Intestinal colic is caused by a spasmodic contraction of the muscular layers on the intestinal tube; is the result of constipation or presence of undigestible food; accompanies many constitutional diseases like chronic malaria, rheumatism, syphilis, and is one of the prominent symptoms of chronic lead poisoning. The attack of intestinal colic is accompanied by severe pain, spreading from the umbilicus all over the abdomen, alternating with intervals of ease. The pain is tearing, cutting, pressing, most frequently twitching, pinching, accompanied by bearing-down pains. The patient is restless and seeks relief by changing his position and pressing the abdomen. The abdomen is tender, distended or drawn in. There is usually constipation, but sometimes the bowels are even too loose. The attack lasts from a few minutes to several hours, sometimes ceases suddenly with a feeling of great relief, leaving some soreness which remains for a few days.

In lead colic, which is caused by chronic lead poisoning, we find a slate-colored complexion, dark gums, showing a blue line, obstinate constipation, impaired appetite, slow pulse, and contracted abdominal walls. The prognosis is favorable. The treatment consists in relieving the pain by administration hypodermatically of morphia, which also relieves the spasm. This is followed by administration of purgatives to remove the immediate cause of the colic. A thorough evacuation of the bowels removes the irritating substance causing the spasm.

Intestinal Catarrh — Inflammation of the Bowels.

May be acute or chronic, and the symptoms may vary not only with the character of the disease, but also with its location. The nearest part of the intestine to the stomach is the duodenum, which is often the seat of an acute catarrhal inflammation, the symptoms of which are quite similar to symptoms of acute gastritis, with the difference that the inflammation of mucous membrane of the duodenum readily extends to opening of biliary ducts, and the gall bladder obstructs that opening and causes a retention of gall, so-called jaundice. Onset of the disease is usually a sudden one, may be accompanied by a chill or fever, pain in the epigastric region, more to the right of the median line, vomiting and constipation, rarely diarrhea. The stools are very characteristic, clay colored, due to the lack of bile. The urine, concentrated, heavy, has a greenish hue due to bile pigments.

Acute catarrhal duodenitis, catarrhal jaundice, is a benign disease and usually subsides in the course of a week or two. Sometimes lasts longer. If the jaundice is persistent, lasts longer than six weeks, the cause of it is more than a catarrhal inflammation of the ducts. The cause is of a more serious character, the obstruction a permanent one, due to a stone or a tumor preventing the free outflow of the bile in the intestines. The treatment consists in putting the patient to bed, in warm applications to the upper part of the abdomen, in placing him on a strict diet. If vomiting is persistent, it is wise to restrict his nourishment for the first twenty-four hours to water or cracked ice. Later, a slow increase in the diet is permissible, but while the jaundice persists all fats are to be excluded, because bile is necessary for the emulsification and digestion of fats. A course

of calomel, followed by salts, in combination with above stated measures, is usually sufficient to bring the patient back to recovery. Other drugs are prescribed in accordance with the symptoms.

If the inflammation affects the small intestines we call it enteritis, while when it is localized in large intestine we name it colitis. The inflammation of the small intestines is usually followed by the inflammation of the larger one, and we have to deal with the entero-colitis. On the other hand, it is quite frequent that only the larger bowel is affected, and we have a pure form of colitis. These also appear in acute or chronic variety.

Children are pre-eminently victims of the acute form, but description of this I shall leave to the lecturer on diseases of children and I will speak only of adults. It begins with languor, followed by chilliness and fever, temperature up to 102 and 103. This is followed by pains, colicky, cramp-like, situated around the umbilicus, with tenderness and loose evacuations. The bowels are at first constipated, followed by persistent diarrhea. The stools contain little fecal matter, are yellow or greenish in color, mixed with undigested food. If the stools are numerous they become whitish and watery, the so-called rice-water stools. There is no blood in the evacuations. The appetite is impaired, the food is not assimilated, and the waste is great, resulting in extreme weakness and emaciation. Mild cases last about four to five days, severe ones a week or two. The prognosis is favorable if proper treatment is employed early. The main indication is to put the bowels at rest by ordering a restricted diet, such as diluted milk, weak mutton and chicken soups, strained cereals. The patient is to be kept in bed. Poultices or warm fomentations bring comfort. First empty the bowels. In these cases castor oil is the drug par excellence. It can be substituted by calomel or salts if patients do not tolerate the oil. After the oil has acted and the bowels cleared out, then only do we try to check the diarrhea by giving opium in combinations with bismuth, salol, or some other so-called intestinal antiseptics.

In chronic forms of entero-colitis, the changes in the mucous membrane are seated more deeply, involving the submucous and muscular coats of the intestine, leading often to ulceration, the so-called simple ulcers of the intestine. The chronic form usually follows the acute one, but may also begin as such, the symptoms from the beginning not being very severe but persistent. The diarrhea being the most prominent symptom, stools numbering from six to one dozen during the day and night, consisting of undigested food mixed with mucus, pus and oftentimes blood. They have a semi-fluid consistency and a very offensive odor. This chronic catarrh weakens the patient and causes rapid emaciation. The patient loses flesh, his skin becomes dry and sallow; he becomes irritable, depressed. He is quite sick. The underlying cause of the chronic catarrh may be a specific one, due to tubercular infection. This is the most stubborn case, we may say an incurable one.

The treatment of chronic entero-colitis is not as gratifying as the treatment of the acute form, and taxes to the utmost the skill and ingenuity, as well as the patience of the physician. The first and most important point is the regulation of the diet.. Food is restricted to milk alone, whole or diluted, for awhile. In some cases milk is badly tolerated and then we substitute it by the so-called prepared foods like Mellen's, Horlick's, Imperial Granum, Eskay's, etc.

Rest in bed is of importance, particularly after taking food. This insures a better indigestion and assimilation and causes less irritation of the inflamed bowel. For pain, warm fomentations applied for a few hours during the day. Warm poultices not only quiet the pain

but have a beneficial effect on the inflamed bowel, bring great comfort to the patient and ought to be applied as a routine in the treatment of intestinal catarrh.

Drugs come next in consideration. We are in the habit of prescribing such drugs which, according to our observation, have a tendency to diminish putrefaction and fermentation, so-called intestinal antiseptics. We may make our selection between preparations of bismuth, salicylic acid or the naphthaline group. If the stools are very frequent we combine these antiseptics with opium. If there is an excessive mucus and evacuations are of a very watery character, astringents are indicated like tannic acid, tincture of colombo, or tincture of kino. If the inflammation affects the larger bowel, we are in the position to reach the parts by injecting antiseptics or astringent solutions through the rectum. A solution of boracic acid or borax, salicylate of sodium, or very weak 1:10,000 of nitrate of silver has a good local effect.

To the chronic variety of colitis belongs a form which is called membranous enteritis or membranous colitis. It is a disease of adult life, more prevalent among women of the neurotic type. Neurasthenics and hysterical women are frequently subject to this form, which is one of the most difficult to treat, lasting frequently for years. The symptoms simulate chronic intestinal catarrh, with the difference that the stools contain an excessive amount of mucus, shreds of membrane, oftentimes quite regular casts of the bowel. Such evacuations if they do not contain fecal matter may make a shape of a worm, but on closer examination, even by the naked eye, we can easily settle our doubts. The mucus is transparent and glairy, and there is no formation like we see in worms.

The diet in these cases must be of a less irritating character, and the treatment directed not so much to the local condition, which being the results of a general nervous breakdown, is only a shingle of the underlying ailment.

The treatment is to be directed towards improving the general condition of the patient as practiced in cases of hysteria, neurasthenia. Plenty of fresh air, pleasant surroundings, moderate exercise and tonics, iron and arsenic, do bring improvement.

I ought to speak in conjunction with inflammations of the intestinal tube, of appendicitis which, true enough, is in most cases a surgical condition, removed only by operative interference; but I wish to mention here that not every case of appendicitis must be operated upon. There are cases of simple innocent catarrhal inflammation of the appendix which subsides and yields completely to the conservative medical treatment. An ice bag to the right side of the abdomen, a thorough cleansing of the bowels, rest in bed, restricted diet, fluids only, will restore many a case back to health.

Another condition which very frequently calls for the aid of the surgeon is intestinal obstruction. If there is a twist of the bowel, or if one part of the bowel invaginates into the other, such obstruction can only be relieved by an operation, by a direct removal of the cause; but we meet cases where symptoms are produced by impaction of the bowel with hard stone-like fecal masses which accumulated there in one or the other curve of the intestine, usually the larger one, for a length of time, and these cases of fecal obstruction do get well without an operation. By giving high irrigating enema of turpentine, ox gall, alum, sweet oil, to soften up the hardened masses, will often bring about the most surprising results, and these conservative means shall and must be tried in every case before the patient is delivered to the surgeon. Of course, great caution is necessary not to wait too long, otherwise if the obstruction is not caused

by fecal masses, but is due to mechanical causes of a different nature, the expectant treatment may be dangerous, leading to gangrene of the strangulated bowel.

CARING FOR A BED-RIDDEN PATIENT.

To change the bed linen when a sick person can't sit up, *Good Health* advises to remove the counterpane, and loosen the bed-clothes. Next remove all the blankets with the exception of one, which will prevent the patient from feeling chilly. Now place the clean sheet on the bed over the soiled sheet and blanket, and put another blanket over the clean sheet. The order of the upper bed-clothes should now be as follows: soiled sheet, one blanket, clean sheet, one blanket. If it is possible to have someone to help, the work of changing the sheets is made much easier, but it can be done alone.

If the services of two people are procured, proceed as follows: Stand one each side of the bed, and grasp a good handful of the clean sheet and top blanket. Hold it firmly, and at the same time roll down the soiled sheet with its blanket to the foot of the bed, taking care not to raise the clothes so as to cause a draught to the patient. The soiled sheet and one blanket are now passed out at the foot of the bed, and the rest of the blankets are replaced on the bed.

Draw-Sheets.

Draw-sheets are used in surgical and other cases to keep the lower sheet from getting soiled. They are generally made by folding a sheet so that it shall reach from just below the shoulder to the knee. Sometimes a piece of waterproof sheeting is inserted in the folds. They may be changed in the same manner as lower sheets.

To Change the Under Sheet.

Loosen the under sheet all around, turn the patient gently on one side, and roll the soiled sheet up lengthways until half of it forms a roll against the patient's back. The bed is now in this condition, one-half is covered by the clean sheet, the other by the soiled one, the unused halves of the sheets forming rolls running from top to bottom down the center, and the patient is lying near the center on the soiled sheet. Now the patient is to be again moved, first to his back, and then to his other side. During this movement, he crosses the two rolls, and so lies on the clean sheet. It is now only necessary to draw away the soiled sheet and unroll and arrange the remainder of the clean one. In some surgical cases, where a splint or other apparatus has to be kept in place, it is injurious to turn a patient from side to side. In such cases the under sheet must be changed by rolling from top to bottom. Two people stand, one at each side; all that is free of the soiled sheet is formed into a roll at the head; the clean sheet—rolled up—is placed above it. The patient's shoulders are then raised and the soiled sheet rolled up, and the clean sheet unrolled until the small of the back is reached. The shoulders are then laid down, the hips raised, and the rolling and unrolling process continued. Finally the feet are raised. If necessary the body must be sponged or wiped before it is laid on the clean sheet.

CLOTHING THE NEW-BORN CHILD.

I. N. Cohen, in the *Medical World*, objects most decidedly to many parts of the infant's dress as usually made; and has no hesitation in giving his objections words, whenever and wherever he is brought into contact with these errors.

The *bandage* of the child is *always* pinned too tightly. The child no more needs this swathing than the adult; its abdominal muscles are just as strong, and just as capable of performing their functions. But there is something worse than the mere suffering which follows such confinement. The bandage extends

upward so as at least to embrace the floating ribs, hence the insertion of the diaphragm, and often much higher. Here is a more or less serious impairment of the respiratory function, as the band is more or less tightly applied. We not only have suffering and restlessness upon the part of the child from this, but occasionally such impairment of the lungs as will lead to a fatal result.

There is another lesion, continues the writer, that may be directly attributed to this, which is infantile constipation. It comes on gradually; is attended with colic, sometimes with infantile dyspepsia. True, in many cases, it does not produce any present marked inconveniences, but it lays the foundation for future constipation, hemorrhoids, prolapsus ani, and, he believes, to hernia.

The child needs such band only for the purpose of retaining the dressings of the cord and to give warmth. One thickness of soft and elastic flannel, not so wide as to extend upward on the thorax, or down to be wet with excretions, will answer the purpose. Being elastic, it maintains its place without being applied so tightly.

Its *skirts* are usually badly made. The waist is made of cotton stuff, usually stiff and harsh, and so wide as to prevent any warmth from the flannel attachment. As frequently put on, it chafes the child under the arms and is unpleasantly bulky and cumbersome about the body.

The *diaper* is as bad or worse than the remainder. If the parents are in good circumstances, and it is a first child, it will be of linen; at any rate, it will be harsher than there is any need. Let this be wetted and dried several times without washing, and we have a cause of irritation that would make the adult wince if obliged to wear it. I have seen scores of cases in which irritation and chafing about the genitals, the perineum, nates and thighs were the result of such treatment. Yet the mother could not imagine why her child should be so affected.

While not insisting that they should be washed after each discharge of urine, though it would be better and pleasanter for the child if they were, he objects to their being used until they smell and are as foul as it is possible for so much linen or cotton to get. If children are delicate, the absorption of these excretions must prove very detrimental.

When a child shows such irritation as has been named, he recommends that the diapers be made of canton flannel, which is soft, unirritating and pleasant, and that they be rinsed in clean water every time they are soiled, before drying and using.

MILK DIET POOR IN TYPHOID.

Kerley, in the *American Journal of the Medical Sciences,* scores the milk diet in typhoid fever. I have used the milk diet, he says, and have seen it used in many cases. Because of an early selection of a medical career, I came in close association with country physicians. It is on the farm and in the country village, where the well and the vault for the sake of convenience are built as close to the dwelling as possible, that we find typhoid fever a frequent visitor. I have watched many of these cases ill with typhoid fed on text-book milk, and I have seen the distended abdomen, the high, protracted temperature, the prolonged and active delirium, and later I filled out the certificate, all but the signature. These patients were given milk in copious amounts at two and three-hour intervals, and milk constituted the sole food and drink. The milk diet is popular because many physicians have never tried any other means of feeding and it is the easiest way. It is easy for everybody but the patient, and he is not consulted. It is easy for the physician, it is easy for the nurse, it is easy for the household;

it is much easier for the doctor to order so many pints of milk a day than it is to write out a diet schedule of right caloric values and explain the preparation of the foods suggested.

The mixed feeding is not employed, further, for the reason that physicians fail to realize that other foods may be taken care of easier than milk, and because of the fear of lay criticism for departing from an established practice. That many people have recovered from typhoid on the milk diet is not to be questioned. That many have not recovered is equally true. We know that typhoid fever is a disease of small mortality. In spite of former unfavorable impressions as to the milk diet in typhoid I used it early in my medical practice because I had been taught that it was right, and if the patient did not do well it was the fault of the patient, and that the system was the correct one. Another very good reason for using milk was that I have never been taught how to use anything else.

My favorable experience in intestinal diseases with a diet other than milk, together with the teaching of Dr. A. Seiber, of New York, led me to use somewhat similar means of feeding typhoid-fever patients.

Mortality statistics do not teach us all that may be learned regarding the disease or a method of treatment. The time element as relates to the duration of the illness and the duration of the convalescence is important. My observation in the milk-fed cases is that the illness is more severe, increasing the danger to life, and that the duration of the illness is longer. Emaciation is much greater and the convalescence is consequently much more protracted than those fed as I have indicated. The case in which the temperature period is cut down to from fourteen to twenty days, with little emaciation and prompt convalescence, should not be put in the same class with the case in which the fever lasts from thirty to fifty days or longer, with a convalescence of three or four months, although both had typhoid fever and both recovered.

It is argued that milk is the ideal diet, and the reason given is that it contains all the nutritional elements required by the organism—fat, proteid, carbohydrate and mineral salts—which is the truth. It is further claimed that milk may be taken in large quantities and be readily digested, which is not true in sick children. The addition of pepsin, hydrochloric acid, etc., has been of no value. I have learned that in order to have a short case and a mild case, the abdomen must be kept flat. Tympanites is an indication of danger, regardless of how it is produced. On the milk diet, tympanites is the rule. On the mixed diet suggested, it is the exception. So long as I can keep the belly flat, I know I have the case reasonably well in hand.

LINES ON A REST CURE.

(With Apologies to Rudyard Kipling.)

When the rest cure's last meal has been eaten,
And the dishes are washed and dried,
When the oldest cow has been butchered,
And the youngest chicken has died,
We shall fast and, faith we shall need it,
Be empty for one year or two,
'Til the hunger of all good stomachs
Shall set us to eating anew.

And those that are fat shall be happy,
They shall sit in a dining chair
And carve at a ten-pound pork roast,
With entrees of heaviest fare.
They shall have real cows to milk from,
Cabbage, corn beef and stew.
They shall eat for an age at a sitting,
And never be full at all.

And only hunger shall urge them
And none of the stomachs shall pain,
And no one shall eat for money,
And no one shall eat for gain;
But all of the joy of eating
And each in a separate way,
Shall take the food as he wants it,
Whether 'tis onions or hay.

Only those who have gone through the "Stuffing Process" of a rest cure—with its raw eggs, milk, beefsteak ad nauseum, ad infinitum, add any food one can think of—can appreciate this poem.

GERTRUDE SMITH, Hastings, Mich.

REFRACTION.

COMMONER DISEASES OF THE EYE.

PERCY A. TYNDALL, in the *Hahnemannian Monthly*, advises one of the excellent rules to follow in eye work is "be a routinist," that is to make it a regular habit to examine the eye in a routine way with each patient who complains of any eye condition and by so doing you will very likely escape missing some points that might be of considerable service. No matter what the patient complains of, let your examination cover the whole eye.

Begin with the eyelashes—see if any are distorted, see if the eyelids are abnormal or the lid edges are involved. Then consider the lacrimal apparatus. Don't be content with examining the bulbar conjunctiva, but if necessary evert the upper lids and thus see the under surface, where diseased conditions often hide their ravages. The cornea should next come under observation—see if it is transparent, of brilliant luster, no break in the epithelium; then lastly we consider the iris—its color and luster, its ability to contract and dilate and the size of the pupil as compared with the pupil of the other eye. Following such a rule a few times makes its application very quick and of great service.

One of the first things to do following such an examination is to test the patient's vision—particularly distant vision and to make note of the fact. It is always wise to do this before instituting any form of treatment, for sometimes following quite trivial involvement, the patient may discover the vision of one eye to be very poor, and it may have been so for a long time but may have escaped his attention until the present time. A record of the vision at the first visit if it is possible to get it, is necessary to a complete record.

The general appearance of the eyes of the patient will often go a great way toward helping make the diagnosis—a patient who shields the eyes from the least light and holds the head down, will lead you to suspect a lesion of one of the vital structures. If the eyelids are somewhat reddened, especially on the edges, some muco-purulent discharge and no particular photophobia, your diagnosis will probably be one of the forms of conjunctivitis. If such is the case you will find on closer inspection that the injection is particularly marked on the palpebral surface of the lid and considerably on the ball, but fading away as the vessels near the cornea. You can readily see that the injection is superficial from the fact that the vessels can easily be moved on palpation. By following the routine examination as suggested above you can practically diagnose the case by exclusion. As regards the form of conjunctivitis we have to deal with, only a bacteriological examination will disclose.

If the patient complains of epiphora, it may be due to errors of refraction or to a contracted puncta or to a stricture of the nasal duct. Inspection will show whether the puncta is the part involved. The author cites two recent cases—one with absence of the puncta on each lower lid but present in the upper lid, and the other with an absent puncta of the lower lid of one eye, that complained of epiphora of rather recent date and the examination disclosed the absence of the puncta as an anatomical curiosity, but the probable cause in each instance was some error of refraction, as the complaint was of too recent origin to be due to the absent puncta. If pressure over the lacrimal sac causes regurgitation of mucus, we know then that we have an obstruction to the outlet of the lacrimal

sac, very likely a stricture in the nasal duct. The use of an eye wash or apparently indicated remedy will not relieve the condition and it is better for you to make the diagnosis than your competitor across the street.

When a patient complains of a pain in the eye, it always means an involvement of one of the vital structures of the eye, such as the cornea, the iris or the ciliary body. The ciliary body is the highly vascular structure attached to the sclera about five millimeters behind the limbus and from which springs the iris and the suspensory ligament, which controls and supports the movements of the crystalline lens. It is of nutritional value to the lens and to the vitreous, and any involvement of it you can readily see is liable to cause serious impairment of its function.

Another symptom always present when the cornea, iris or ciliary body are involved is what is termed ciliary or peri-corneal injection—an area of deep injection immediately surrounding the cornea. The presence of this ciliary injection will at once tell you that one of the vital structures of the eye is involved and then you must endeavor to diagnose by exclusion or otherwise, which part is affected.

The presence of pain as above stated always means an involvement of one or more of these structures, but the author lays stress on the point that absence of pain does not necessarily exclude their involvement.

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WHY ONLY ONE MENTAL IMAGE?

Dr. A. A. Macfarlane, in his address delivered before the Scottish Optical Association, propounds the question: Having found the clearest image on each retina by learning to have it cast on the fovea, how does the child manage to see with its brain one image only of the object viewed? We are in the habit of saying glibly that there are corresponding points on the retinæ, and therefore the images fuse into one because, projected into space again, the images overlap. It is strongly probable that the anatomical arrangement has a good deal to do with it. In all animals where the fields of vision, as geometrically determined, overlap, there is a decussation of the nerve fibres, and the greater the overlapping of the two fibres the greater the size of the decussating bundles. That is, the more the fields overlap, the larger are the number of points which are temporal to the one field and nasal to the other; and we find that the greater the number of these points, the thicker the decussation. So that we know, with certainty, that there is an anatomical arrangement favoring binocular single vision.

But we must not conclude that just because images fall, say, on two foveæ, hence the image is single on account of the anatomical relationship. The brain has got to learn to project the foval image along the principal axis containing the fovea, and that being done in each case there is a visual sensation in the visual center in the brain, and the other centers in the brain controlling muscle sense locate its relative position, the result of the fusion of two retinal images. That the image is not single solely on account of the anatomical relationship, but is also the result of cerebral education is proved by the following:

A patient, suffering from convergent strabismus, is operated upon, and has the fovea brought into the line of vision, sometimes only to find after operation that there is diplopia. If the anatomical arrangement were the sole cause of fusion of images there should be no diplopia. Not only is there diplopia, but, even although a little convergence still remains, there is crossed diplopia, as if the visual lines from the two foveæ were divergent. This shows that, whilst the brain projects along the visual axis in the non-squinting or fixing eye, it also

projects along a line in the squinting eye containing the object, the nodal point, and that part of the retina, inside of the real fovea, which that line cuts into. The brain has learned, therefore, to project from a false fovea, but, as the image is suppressed in binocular view, there can be no fusion of the two images, more particularly as the image of the false fovea is so much duller than that of the other eye, on account of its much less sensibility to light. In fact, that is the reason why it is suppressed.

So that, starting with a false fovea, the brain receives peripheral images from different parts of the squinting eye's retina from what it would if the eye were not squinting, and still for peripheral vision there is no doubling, and very often there is no suppression of peripheral images. Here we have had wrong parts of the field of the squinting eye receiving impressions, but the eye has learned to fuse the peripheral images which it receives. The result is that when the eye straightened the real fovea represents a part of the visual field to the side of the sound eye. Hence we have crossed diplopia, the real macula not being a suppressed image spot, but functionating in peripheral vision. To show that cerebral education has everything to do with fusion of images falling upon parts of the retinæ from one object, it is not long before the brain, after the operation, gets reëducated, and double vision disappears.

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STATISTICS OF REFRACTION.

The Optician has been asked to state in percentages the average frequency of occurrence of the several conditions of visual refraction, and gives the following list quoted by Harry Taylor: Em., 4; H., 30; M., 4; simple H. A., 10; simple M. A., 2; comp. H. A., 45; comp. M. A., 3; mixed A., 2. The original authority for these figures is not named, but is doubtless a good one. It must be confessed, however, that a great number of widely differing estimates have been published under the names of medical men. Both in private and hospital practice, the cases medically examined are, to a great extent, selected or sifted by exclusion of slight and simple errors of refraction, so that they are not representative of the average.

When a uniformly complete and careful examination is made of the eyes of elementary school children, probably a close approach to the true average is reached. And the same thing might be said for a statistical analysis of the case books of an optician in large practice. This is, of course, meant to refer to an optician who prescribes spectacles himself, and also receives for execution the prescription of the local oculists and the eye hospital. Such a record, if propounded by one whose name inspired confidence, should carry more weight than the figures of a medical man, however eminent and experienced. Its preparation would involve much tedious labor; but we have no doubt there are opticians public-spirited enough to undertake it.

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INACCURACY OF THE LENS MEASURE.

That the lens measure used are to determine the radii of curvature of spectacle lenses is more or less inaccurate for exact work is, perhaps, a well-known fact, says A. E. Parsons in the *Optical Journal-Review*. However, it may be of interest to learn just how much error is manifest in a specific case. To illustrate we will take the case of a lens with a convex and concave surface, the radii of which are equal. This kind of lens, as you will readily see, would be considered, if determined by the lens measure, to be a plano; nevertheless, it will produce a slight motion against it if it is moved before the eye which, of course, indicates a collective lens.

The phenomenon is explained by taking into consideration the thickness of

the lens. Therefore, for the sake of discussion, let us assume the following conventions, viz.:

Thickness of lens = t = 0.2 cm.

Radii of curvature = r = 10 cm.

Index of refraction = n = 1.5.

Focal length of convex surface of lens for parallel light = f_1.

Focal length of concave surface of lens for parallel light = f_2.

Equivalent focal length of both surfaces of lens, including thickness, = E.

By formula we then have:

$$\frac{1}{f_1} = \frac{n-1}{r}.$$

$$f_1 = \frac{r}{n-1}.$$

$$\frac{1}{f_2} = -\frac{1}{f_1} = -\frac{n-1}{r}.$$

$$f_2 = -\frac{r}{n-1}.$$

Also by formula we have:

$$E = \frac{f_1 \times f_2}{f_1 + f_2 - \frac{t}{n}}.$$

Substituting we have:

$$E = \frac{\left(\frac{r}{n-1}\right) \times \left(-\frac{r}{n-1}\right)}{\left(\frac{r}{n-1}\right) + \left(-\frac{r}{n-1}\right) - \frac{t}{n}}.$$

$$E = \frac{-\left(\frac{r}{n-1}\right)^2}{-\frac{t}{n}}.$$

$$E = \frac{n\,(r)^2}{t\,(n-1)^2}.$$

Substituting the numerical values we have:

$$E = \frac{1.5\,(10)^2}{.2\,(1.5-1)^2} = \frac{150}{.05} = 3000 \text{ cm.}$$

From these deductions it will be seen that two millimeters thickness in a lens of this kind will give it a focal length for parallel light of 3,000 cm., or a power of 0.033 diopters. It will also be seen that a greater curvature or, in other words, by decreasing the radii, we will increase the power. Hence the greater the thickness and curvature of a lens the more it will vary from the findings as determined by the lens measure.

Another interesting phenomenon in this connection is the fact that although the thickness has a bearing on the refraction of a lens, yet when plus and minus lenses of the same dioptral power are placed face to face they will exactly neutralize each other. The explanation of this is that the effect produced by the thickness is the exact opposite in each lens, thus allowing the combination to neutralize.

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USING PLANOS IN TESTING.

When we look through glass, says the *Optical Journal-Review*, there is a loss of light, as we can easily prove by half opening the window and by looking out first through the glass and then in the clear. In testing eyes, where the visual acuity is good, this may fall off slightly because of the light-absorbing property of glass. To this end, if we are trying what effect an extra plus .25, for instance, will have, we ought to make the comparison, not by means of the glass first off and then on, but by trying first the plus .25, then trying a plano lens. It is not, as a rule, a good procedure to go by the patient's statement as to how he can see with a certain lens, but there is one condition where we can safely do so, and that is where the addition of plus produces an improvement. We can safely keep on adding plus so long as this happens. Where we can not be guided by the patient's statement alone is where he claims an improvement of vision as the result of the reduction of plus or the adding of minus. This effect of added plus we can often get better by comparing the effect of a low plus with a plano than we can just by trying the plus alone. There are undoubtedly many persons who could be given a little more plus in the test if a plano had been used as a comparison and control.

CHILDREN FITTED AT CLINICS.

The question is put by a correspondent of the *Institute Journal*, not in a critical spirit, why so many children, age eight to twelve, fitted at hospitals, get no better vision than 6/9 or 6/12 with their glasses. Lionel Laurance replies that the reason may be one of several, or of several combined. The average child taken to a hospital is not of the highest type physically or mentally, the nerve stimulus must be strong to induce mental response, and nervousness plays a part when such child is asked to read types. But the chief reason is probably that these children are practically all hypermetropes and have been tested under full atropinization and have, perforce, to wear the glasses estimated when their eyes are in that condition; they are, of course, overcorrected. If, at the age mentioned, there is a case of myopia, it would not be so extraordinary that the visual acuity is reduced, seeing that the eye is likely to be unhealthy. Yet again, it may be that the glasses have been in use for some years, and it is then extremely probable that they no longer suit, they being too weak for a myopic case and too strong for a hypermetropic case, because the former has increased and hypermetropia is not a fixed quantity in children's eyes. The moral is that children who use glasses should be tested at reasonable intervals.

THE BLIND SPOT AND COLORS.

Using colors equally intense, or of the same luminosity, J. B. Haycroft (*Lancet*) found that the blind spot of the eye was smallest with gray, but of gradually increasing size with blue, yellow and green, and largest of all with red. This order of colors agrees with what is normally found in perimetry.

ATOPHAN DIAGNOSIS OF GOUT.

Zuelzer, in *Berliner klin. Woch.*, reports that he has observed that the increased elimination of uric acid in gouty subjects after the use of atophan is associated with a marked diminution in the uric acid content of the blood. This increased elimination of uric acid and diminished uric acid content of the blood go hand in hand with a marked improvement in the clinical symptoms. Weintraud and others have found that uric acid injected intravenously into gouty patients is rapidly excreted when atophan is given at the same time, while, on the other hand, if atophan is not given, gouty individuals retain the injected uric acid for a long time. They have also found that the same increase of uric acid excretion occurred when the sodium salt of nucleic acid was given with a simultaneous dose of atophan. They believe that the chief etiological factor in gout is on inability of the kidney to excrete uric acid. They explain the action of atophan in gout by a direct and selective stimulating action of atophan upon the kidney that increases its ability to excrete the uric acid. Zuelzer does not believe that this explanation is sufficient, although it may be partially true. He believes that the increased elimination of uric acid in gouty subjects following administration of atophan is of diagnostic value in differentiating true gouty affections from non-gouty joint inflammations. He says that the urine of a true case of gout under treatment with atophan will show an abundant urate deposit sufficient to be recognized by the gross appearance of the urine. This deposit of urates will not occur in non-gouty patients. There are, of course, exceptions to this general rule, but Zuelzer believes that this rough test will differentiate the majority of cases of true gout. He adds a note regarding the good results obtained by him in the treatment of recent cases of neuralgia with atophan.

MEDICAL PHARMACY.

METRIC SYSTEM IN PRESCRIPTION WRITING.

H. LICHERMAN, in the *New York Medical Journal,* makes a plea for the use of the metric system in prescription writing, and gives some practical suggestions for its adoption.

To simplify the method as much as possible, he says, we must take a prescription of a certain size, having a certain number of doses as a unit; so we take a two-ounce mixture, a teaspoonful at a dose. This would make approximately fifteen doses; not quite, but this number is close enough for practical purposes, and above all, makes a number that can be easily doubled, tripled, or quadrupled, as necessity may require. Now, two ounces are approximately sixty grams, and one gram contains approximately fifteen grains. This being the case, one can easily see that all we have to remember is the dose of the drug *in grains* to be able *immediately and without any uncertainty* to put down the number of grams for the entire sixty grams (or c.c.) mixture (the dose being one teaspoonful or approximately four c.c.). Take, for example, potassium acetate and potassium bromide. We wish to give fifteen grains of the former and ten grains of the latter at a dose. Without more ado we write the prescription so:

	G. OR C.C.
Potassii acetatis	15
Potassii bromidi	10
Syrupi	q. s. ad 60
Aquæ	q. s. ad 60

Sig.: One drachm in half a tumbler of water, *cr in dic, post cibum.*

In the signature I say one drachm because that amount has grown to be synonymous with teaspoonful. It adds to the simplicity of things.

When the dose is less than a grain, it is just as easy. We simply take that decimal part of the gram which our dose in parts of a grain indicates. Suppose we prescribe gr. ¼ of codeine sulphate:

	G. OR C.C.
Codeinæ sulphatis	25
Syrupi tolutani	30
Aquæ	q. s. ad 60

M. Fiat solutio. Sig.: One drachm *tertia quaque hora.*

The amount of syrup of tolu is about thirty minims, or about half a teaspoonful.

Alkaloids, and other drugs like arsenic, mercuric chloride, etc., which have very small doses, must be approached from another direction, but this is one which leads just as straight as the other to simplicity. We take strychnine and atropine for our standards. We will say that the average dose of strychnine is 1-60 grain and that of atropine, 1-120. That would be in the metric system one milligram for strychnine (0.001), and half of that for atropine (0.0005). All the other strong drugs can be calculated from these two standards, as can variations in dose:

	G. OR C.C.
Strychninæ nitratis	015
Atropinæ sulphatis	0075
Aurii et sodii chloridi	03
Aquæ	q. s. ad 60

M. Fiat solutio. Sig.: One drachm *bis in die.*

Here strychnine nitrate was given 1-60 grain per dose, atropine sulphate 1-120 grain, and gold and sodium chloride 1-30 grain. The best and easiest way is to calculate the number of doses for the total, as follows: For strychnine, $0.001 \times 15 = 0.015$; for atropine, $0.0005 \times 15 = 0.0075$, or half of 0.015. as 1-120 grain is half of 1-60 grain.

Suppose we wished to give the strychnine in doses of 1-45 grain instead of 1-60 grain; that would be half as much more: instead of 0.015 for the entire amount it would be 0.022. The same

way 1-30 grain to a dose would be twice 0.015 or 0.03. In this way the size of the dose can be very finely regulated.

Suppose we wished to make the foregoing prescription suitable for hypodermic use, and we wanted, say, ten drops to contain the dose as prescribed above (*i. e.*, strychnine nitrate, 1-60 grain; atrophine sulphate, 1-120 grain, and gold and sodium chloride, 1-30 grain), if we wished to make about fifteen doses, the total amount of the drugs would remain the same, but the solvent would be added up to ten c.c. instead of to sixty c.c. (15 × 10 drops = 150 drops, or 10 c.c.) as follows:

	G. OR C.C.
Strychninæ nitratis	015
Atropinæ sulphatis	0075
Aurii et sodii chloridi	03
Aquæ destilatæ.....q. s. ad	10

M. Fiat solutio. Sig.: Give ten drops hypodermically morning and night.

A very interesting short cut is noticed about the hypodermic solution; in the standard fifteen dose prescription the number of drops to contain the amount for one dose corresponds to the number of cubic centimeters that the whole is made up to. In the foregoing prescription, if we added distilled water to twelve c.c., we should have to give twelve drops to have the patient get the required dose. If made up to fifteen c.c., fifteen drops would have to be given, etc.

If the pharmacist finds any difficulty in weighing milligrams or parts thereof, he may use the ready-made hypodermic tablets. Those for atropine, for example, come in 1-120 grain sizes, and fifteen of these may be dissolved in the mixture to make up the required seven and one-half milligrams.

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CACTUS AS A HEART REMEDY.

The *Eclectic Medical Journal* declares that cactus will slow a fast heart due to nervous or cardiac weakness, and will likewise stimulate a slow heart, due to overstimulation of the sympathetic or to muscular degeneration, to increased action. It seems to matter little whether the heart action be feeble, violent or irregular, provided the underlying cause is lack of innervation, associated with mental depression, or in excitable or nervous individuals it relieves because of its therapeutic tendency to promote normal rhythmic action of the heart muscle. Thus we find cactus of the utmost importance in the treatment of functional cardiac irregularities, as pain and palpitations, whether purely nervous or due to excesses, exhaustion or dyspeptic association. In the latter instance it is, of course, only of relative importance, for the gastric disturbance demands primary attention. We find it of great usefulness in cardiac dyspnea, rhythmic intermission, spasm of the heart muscle, heart stitches (pseudo-angina pectoris), all of these associated with the sense of constriction. In true angina pectoris it sometimes relieves, and is especially valuable in cardiac neuralgia and rheumatism when associated with marked innervation. It is of the utmost importance, and this point we would strongly emphasize, in the heart weakness following typhoid fever, pneumonia, la grippe and other exhausting diseases, when valvular incompetency threatens, the heart muscle is impaired and nerve force is low. It is equally useful in the cardiac exhaustion following in the wake of excesses—the toper's heart, the smoker's heart, the heart worn from sexual exhaustion, masturbation and the muscle exhaustion from bicycle riding, of the soldier on long marches and the brain worker, and of the fretted heart of worry and sorrow and the disordered heart of the tea and coffee victim. It sustains the heart during fevers, in endocarditis and in pericarditis. Though not curative in the following, it alleviates and gives nerve strength and comfort: Fatty degeneration, aortic and mitral regurgitation and valvular insufficiency. It is universally agreed upon that it acts unfavorably in mitral stenosis. Persistent subnormal temperature has been cor-

rected by cactus, and it relieves the unpleasant palpitations in Graves' disease. Cactus gives more blood to the organs by improving the heart action, hence the nutrition of the nerve centers of the whole body is reinforced and better health results. Remember that it is only relatively useful in structural heart disease, but that it is nevertheless most serviceable.

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OFFICIAL VACCINES.

Fred I. Lachenbach, in the *California State Journal of Medicine*, thus lists the vaccines of the U. S. P. and N. N. R.:

Acne Vaccine—A vaccine prepared from acne bacilli (Bacillus acnes).

Bacillus Coli Vaccine—(A suspension of killed bacillus coli communis in physiologic salt solution, with an added preservative).

Bacillus Pyocyaneus Vaccine — (A suspension of killed bacillus pyocyaneus.

Friedlander Vaccine—A vaccine prepared from the Friedlander bacillus.

Gonococcus Vaccine—(A suspension of killed micrococcus gonorrhea (gonococcus of Neisser) in physiologic salt solution, with an added preservative).

Micrococcus Neoformans Vaccine—A vaccine prepared from micrococcus neoformans.

Pneumococcus Vaccine—(A suspension of killed diplococcus pneumoniæ in physiologic salt solution, with an added preservative).

Staphylococcus Vaccines — (Suspensions of mixed strains of killed staphlyococcus pyogenes albus, aureus, and citreus, in physiologic salt solution, with an added preservative).

Streptococcus Vaccine—(A suspension of mixed strains of killed streptococcus pyogenes in physiologic salt solution, with an added preservative).

Typhoid Bacillus Vaccine—(A suspension of killed bacillus typhosus in physiologic salt solution, with an added preservative).

While N. N. R. gives indications for the uses of these various bacterial products, their use is confined to those specific infections to which these various pathogenic organisms give rise. Their applicability should, wherever possible, be confirmed by bacteriological diagnosis.

Bacterial vaccines are conveniently classed as "stock" vaccines, and autogenous (homologous) vaccines.

Stock vaccines are suspensions of killed pathogenic bacteria in physiologic salt solution to which phenol or trikresol has been added as a preservative. They are standardized to represent an approximate number of bacteria to the cubic centimeter. Stock vaccines may represent but one specific organism, or many diverse strains of an organism, in which latter case they are termed "polyvalent" vaccines. Or, they may consist of two or more different organisms, in which case they are termed "mixed" or composite vaccines.

An example of the former (polyvalent) is streptococcus vaccine. The streptococcus occurs in various modifications under such widely differing conditions as erysipelas, scarlet fever, and puerperal septicemia. A serviceable stock vaccine should therefore represent strains of streptococci derived from these various sources. If the vaccine does not represent the particular strain responsible for the infection, it is not likely that the vaccine will prove of service. This would characterize the limitations of the stock vaccine, but the case of the streptococcus is rather an extreme example of an organism's proneness to undergo modification. In most other instances differentiation is less marked and stock vaccines frequently have proved as serviceable as those prepared directly from infecting material taken from the individual source. The most extensively employed biological products are prepared from "stock" material as, for example, diphtheria antitoxin, tetanus antitoxin, vaccine virus, the various

tuberculins, and practically everything listed by producers of biological products.

Mixed vaccines are a recent development in the field of vaccine therapy, and their introduction is due to the fact that different types of organisms are found frequently associated in various bacterial infections. It has been observed also that a pure infection in which but one type of organism is the etiological factor, may develop into a mixed infection; and, further, the bacterial flora of a mixed infection may undergo modification in the course of the disease.

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CHEMICAL DISINFECTANTS.

R. R. Rogers, in the *Physicians' Drug News*, states that in the class of chemical disinfectants, we have an almost infinite variety of materials, a few having remarkably high efficiencies, and a large number relatively low in efficiency. The chemical disinfectants roughly consists of three classes, namely, non-metallic, the metallic, and the organic products. Among the non-metallic products may be mentioned chlorine, bromine, hypochlorites, chlorates, fluorides, oxygen, ozone, hydrogen peroxide, sodium peroxide and other metallic peroxides, the oxides of nitrogen, sulphur, hydrogen sulphide, sulphur dioxide, the sulphites, and the acid sulphites and the mineral acids.

Among the metallic products, first of all must be mentioned mercury, and then in order of general decreasing efficiency, silver, copper, arsenic, tin, lead, zinc, aluminum, iron. Such substances as mercuric iodide, silver iodide, hydrogen peroxide, mercuric chloride, silver nitrate, represent the highest efficiency we now know in disinfectants. Cost and other reasons prevent us from using these, except the hydrogen peroxide and corrosive sublimate, and even in the case of these two their use is restricted by their cost. These substances just enumerated are from 1,000 to 3,000 times as efficient as common salt. That is to say, one pound of corrosive sublimate would accomplish as much as 2,000 pounds of salt, and yet salt is very extensively employed for preventing micro-organic development, and has been used since time immemorial.

Among the organic substances we have a very great variety of materials, in fact, a number of organic substances have extremely high disinfecting efficiencies, in fact, almost maximum. But their cost prevents them from becoming commercial successes. The most successful commercial disinfectants consist of certain portions obtained from various coal or wood tars by fractional distillation. Carbolic acid, cresylic acid, creosote oils, and a variety of other substances, whether phenolic or not, comprise most of the organic commercial materials used for disinfection.

Most commercial disinfectants of the phenol group mix with water and give emulsions varying in color from white to chocolate brown. They consist of the cheaper phenolic fractions from coal tar, or in some cases wood tar, and afford a big saving of material that would otherwise be waste. As before mentioned, these materials are employed because of their extreme cheapness, and the manufacturers of commercial disinfectants have educated the users of disinfectants into thinking that the heavier and more foul smelling the disinfectant, the more efficient it is, whereas, as a matter of fact, quite the contrary is true.

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INFUSION AND DECOCTION.

The *Physicians' Drug News* points out that infusions differ from decoctions mainly in the lower heat employed in the aqueous extraction of the drug. In the preparation of a decoction the drug is placed in a suitable vessel and cold water is poured upon it and then brought to the boiling point, while an infusion is made by percolating the drug with hot

or cold water, according to requirements, or by maceration in the water. Infusion of wild cherry is prepared by first macerating the drug with cold water. generates the hydrocyanic acid and volatile oil; then the drug is percolated with cold water, the percolate being received in a glass jar containing glycerin. Heat would destroy the volatile constituents mentioned, glycerin preserves the infusion for a time and improves the taste. Metal utensils should not be used on account of decomposition of the hydrocyanic acid thereby and also the tannic acid would react with most metals.

DRUGS TO BE WITHHELD DURING MENSTRUATION.

Hartwig Kandt, in the *New York Medical Journal,* points out that menstruation involves physiologically an engorgement of both uterine and ovarian circulation. During this period, therefore, we should withhold:

1. Drugs which tend unduly to increase this normal pelvic congestion, as drastic purgatives (aloes, podophyllin, salts), hot drinks (alcoholic or otherwise), hot water, sitz or full baths, vaginal douches, poultices of mustard, flaxseed or kaolin to the lower abdomen.

2. Drugs which would tend to hinder this normal congestion, as cold water (ice cold drinks, full or sitz baths), cold applications to the lower abdomen (ice coil, ice bag).

3. Drugs changing the coagulability of the blood (calcium chloride, calcium and strontium lactate).

4. Drugs tending to cause abnormal contraction of involuntary muscle, by either paralyzing the nerve endings (belladonna, atropine) or by direct stimulation of the uterine muscle (ergot, quinine, strychnine, asafetida).

With the average modern woman, menstruation is not merely a localized pelvic process, but seems to unbalance to some extent her mental and psychic equilibrium. We should not add to this disturbance by the exhibition of general stimulants (strong alcoholic beverages) or general depressants (bromides, chloral).

Finally, it may not be amiss to protest against the administration of opiates during this period, except in emergencies, for fear of creating a habit.

LUMBAR PUNCTURE.

Dunn and Stevens, in the *Interstate Medical Journal,* present the following conclusions:

(1) Lumbar puncture should be resorted to almost as a routine in serious traumata of the central nervous system and in post-traumatic neurasthenia both as a diagnostic and therapeutic procedure.

(2) Inflammatory affections of the brain and cord cause definite changes in the cerebrospinal fluid. Acute and chronic inflammatory affections (the so-called degenerative inflammatory types) can be differentiated by examination of the cerebrospinal fluid.

(3) Simple degenerative conditions such as combined degeneration, and the degeneration of pernicious anemia, may cause no manifestations in the cerebrospinal fluid.

(4) Parasyphilitic processes can be diagnosed in their earliest stages only by serological methods. Only in their early or exudative stages can we hope for curative therapy.

(5) The effect of therapy may be checked up by occasional examinations of the cerebrospinal fluid.

(6) A positive Wassermann reaction may occur in the cerebrospinal fluid in cerebrospinal syphilis.

ELECTRO-THERAPY.

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THE CATAPHORIC APPLICATION OF THIOSINAMINE FOR CERVICAL LACERATIONS AND URETHRAL STRICTURES.

By C. S. NEISWANGER, M. D.,

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IN a former issue of the *Chicago Clinic,* under the caption of "The Removal of Scar Tissue," I stated it to be my intention to take up the treatment of other lesions amenable to treatment by the cataphoric application of thiosinamine.

Cervical Laceration.

In searching for the cause of many distressing lesions accompanied by pain in the head, sleeplessness, extreme nervousness and dysmenorrhea, old lacerations of the cervix uteri are almost invariably overlooked. Surgical procedure for removal of the scar tissue is only partially successful, as the granulation and healing of the incisions made by the operator are oftentimes productive of nearly as much scar tissue as the knife has removed.

That we are able to employ cataphoretic methods as curative factors with success in cases of old lacerations of the cervix, and that this treatment means a distinct progress in gynecology, no one acquainted with the facts can deny.

In the past I had some degree of success in softening up and causing absorption of the scar tissue by means of the negative pole of a constant current, but the polar action was apparent also on the sound tissue, which was often excessively cauterized and healed with difficulty.

As has been stated in my first article, thiosinamine has a selective action for scar tissue and, when used cataphoretically. it seems not to affect the sound tissue, the latter being only temporarily hardened by the polar action of the positive pole.

Technique.

The electrode is composed of a metallic staff nine inches long, insulated with hard rubber on the distal end of which is fastened a piece of No. 20 iridio-platinum wire which protrudes from the end of the staff 7/16-inch. The staff is surmounted by a hollow ball, also of hard rubber, which is ¾-inch in diameter and perforated with a number of small holes.

The hollow ball is now filled with absorbent cotton and, by means of a medicine dropper, is saturated with the same solution of thiosinamine as given in a previous issue of this journal.

Before screwing the ball on the staff it is always best to wind a little cotton on the platinum point, wetting it also with the solution.

Place the usual wet pad upon the abdomen and fasten it to the conducting cord from the negative pole of a galvanic battery. By means of a vaginal speculum expose the os and, having attached the hard rubber electrode to the positive pole, apply the ball firmly to the orifice.

A current strength of from fifteen to twenty-five milliamperes may be maintained for ten minutes, and the sitting repeated three times per week until the scar tissue has entirely disappeared and the os has become soft and elastic to the touch.

Strictures.

In advocating the cataphoretic application of thiosinamine for dissolving strictures of the urethra, it is not my intention to deprecate the older method instituted by my friend, the late Dr. Robert Newman, of New York, which has yielded such excellent results in my hands. Indeed, I would approach the subject with all due caution, for I am well aware that the reporting of immature results and deductions is the bane of medical literature.

I have thus far only treated urethral cases and, while the number has not been great, the results show such superiority over the former methods as to warrant further investigation. If present indications are an index of future attainments, this method bids fair to have a very wide and useful scope in genito-urinary practice, especially in those cases where the older procedures have been productive of but little good.

In the treatment of strictures by the Newman method much depends on getting the part free from irritation and ready to treat. This is often a difficult matter and it is even more difficult to decide just when the irritable condition has sufficiently subsided to allow the use of the negative pole.

In treating strictures cataphoretically with thiosinamine, however, the positive is the active pole, and never contra-indicated where there is inflammation or irritation present. Besides, therefore, the introduction of the medicament into the tissue composing the stricture, we have also the sedative and other beneficial effects of the positive pole.

The electrode is almost identical in point of construction with that described under the treatment of cervical laceration, except that the staff is bent to a Van Buren curve and a perforated olive used instead of a ball.

So far, I have found two sizes of olives to fill every indication—18 F. and 24 F.—as it will become evident to only a casual observer that the object of the treatment being to utilize the thiosinamine in the tissue, it is not necessary to pass through the stricture.

If the contracted portion of the urethra is smaller than No. 18 F., it is only necessary to insert the olive point up to and against the lesion, while if the narrowed portion is larger than No. 24 F., the olive point may be inserted into the stricture to remain the required time.

Technique.

The same solution of thiosinamine is used as that given for the removal of scar tissue. A little absorbent cotton is wound around the platinum terminal surmounting the staff, which is then saturated with the solution and the perforated olive screwed into place.

It is always best to immerse the olive in the solution after it is in position, to insure thorough saturation of the cotton with the medicament.

The instrument is then lubricated with a convenient and easily prepared antiseptic, which has proven so satisfactory, both for the hands and all instruments as well, that I will herewith insert the formula for its preparation:

Dissolve a half-dozen Wyeth's antiseptic tablets, or other similar preparation, in a pint of distilled or boiled water, and put into a quart Mason's fruit jar; then add one ounce of the best gum tragacanth (ribbon). Set aside for a few days until the tragacanth is dissolved and then fill the jar with glyco-thymoline. Fron this "stock" jar smaller containers may be filled for use as required.

Attach the electrode to the positive pole of the continuous current, and carefully introduce into the urethra until the stricture is engaged; then turn on current until five milliamperes is reached which should be maintained for five minutes. The negative terminal is the usual abdominal pad or hand sponge.

The treatment should not be repeated oftener than once in five days.

A PLEA FOR THE USE OF ELECTRICITY IN THE TREATMENT OF DYSMENORRHOEA.

By May Cushman Rice, M. D.,

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Dysmenorrhea, that bête noir of physicians, is, in ninety-nine cases out of one hundred, due to one of four causes, namely: An infantile uterus with stenosis and flexion; an inflammatory condition of the uterus or its adnexa; neuralgia of one or more of the nerves of the pelvis, or general debility.

It would seem almost trite to say that the first aim in treatment should be the removal of the cause of the disturbance.

When this is done, with the aid of nature, the disease will be cured. That any one of these causes can not be removed by saturating the system with drugs of various sorts or by any kind of external application is self-evident.

If an infantile uterus be developed, a stenosed canal dilated in such manner as to be permanent, then it follows as a logical sequence that the dysmenorrhea will no longer exist.

An inflammation of the endometrium, of the uterine tissue itself, or of the ovaries, tubes, or pelvic cellular tissue, must receive anti-congestive treatment locally applied to that tissue. Otherwise in spite of all efforts, where roundabout general treatments are relied upon, the inflammation will persist with the train of symptoms incident thereto, dysmenorrhea in the van.

In general debility, drugs, carefully prescribed, together with general hygienic and dietetic measures, play an important part in the general upbuilding.

In dysmenorrhea due to an infantile uterus, the question is—How can the uterus be developed? How can muscular fiber actually be increased in quantity?

There is but one answer, by exercise. Electricity in certain forms provides the stimulus necessary to produce muscular contractions.

That by this means the uterus can be nearly doubled in size is being demonstrated daily.

Consequently, is it surprising that large numbers of practitioners are now taking up the special study of electrotherapeutics that they may intelligently use this most rational remedial agent?

Rapid dilatation only temporarily relieves the dysmenorrhea due to stenosis; gradual dilatation by the negative pole of the constant current permanently cures it. The one mechanically stretches the os; the other causes absorption of tissue.

Why then should anyone advise a method which requires an anesthetic, incapacitates the patient for some time, and produces only temporary results in preference to one which can be given without anesthesia, does not disable the patient and permanently cures?

Possibly it is somewhat more difficult to learn the art of developing the uterus by the induced current, the interrupted galvanic current, or the sinusoidal current, and to dilate the os with negative galvanism than to introduce an instrument into the uterus with the patient asleep and, mechanically, stretch the tissues. But when results are compared, one is repaid for adopting the slower, painstaking method. The secret of successful dilatation is the use of a mild current.

Technique.

Select an olive-tipped electrode, the olive being just a little too large to pass the constriction, the curve of the electrode conforming to the shape of the uterus.

Let the patient assume the dorsal position, then place a wet pad upon the abdomen. Connect the pad with the positive pole of the constant current. Under aseptic conditions, introduce the selected olive to the constriction; connected with the negative pole and through the rheostat turn on five milliamperes of current. Let this pass five minutes unless the olive enters the con-

striction in less time. Then turn off the current and change the switches to the induced current, interrupted from forty to sixty times through the rheotome. Use sufficient current to produce strong contractions of the uterus, always with this current being governed by the tolerance of the patient. Beginning with five minutes increase one minute at each succeeding seance until ten-minute treatments are given.

In three days if the olive previously passed enters the opening unaided by the current, select one a size larger, otherwise use the same one as before.

The induced current without the rheotome quickly exhausts by over-exercising muscles. The rheotome allows slow interruptions of rapidly-interrupted current, and resultant tonicity rather than exhaustion. For dysmenorrhea of the inflammatory type the positive pole of the constant current is especially effective. Though germicidal and astringent in itself, its effect is greatly enhanced by the introduction into the tissues by cataphoresis of one of the oxidizable metals. That copper meets the indications most admirably is being frequently demonstrated by those who are using it for inflammatory infections within the pelvis. It is applied intra-uterine, if an endometritis is present; extra-uterine, per vagina, if the uterus or adnexa are the seat of the inflammation.

Technique.

For the treatment of an inflamed endometrium select a copper sound, with or without a hard rubber insulated tip that will pass the internal os without force. If the entire endometrium is involved and the internal os relaxed the copper may extend over two and one-half inches.

The length of copper surface should depend upon the amount of tissue to be treated.

To prevent its sticking amalgamate the copper by dipping the metal part of the electrode in a 10% sulphuric acid solution, and then into metallic mercury. Rub briskly with absorbent cotton, when the copper will have the appearance of silver. Connect the indifferent abdominal pad with the negative pole, the active electrode with the positive pole. Copper follows the general rule for bases and metals; it is electro-positive, that is, it is repelled by the positive pole. Therefore, it must be applied to that pole when by its affinity for the negative pole it will be deposited in the tissues. After introducing the electrode through the speculum to the fundus, if a tip is uninsulated, withdraw it an inch to avoid too much concentration of current at the point of the electrode.

Turn on thirty to forty milliamperes of current and let pass five minutes; then follow with the induced current given in the same manner as for infantile uterus described above. Cervical catarrh is far more common than corporeal. For this affection choose a copper sound with one inch of copper exposed and a hard rubber insulated tip, and apply in like manner, using thirty to sixty milliamperes of current for from five to ten minutes, according to the severity of the case. Give treatments three times per week.

Allow the patient to remain at the office one-half hour after treatment, and keep quiet during the remainder of the day.

Patients differ very much in tolerance of this current. One should be governed accordingly in the strength and frequency of treatments.

For inflammations outside of the endometrium use Neiswanger's vaginal cataphoric electrode, which consists of a perforated copper ball, screwed to a hollow rod which is insulated with hard rubber.

After brightening with sand-paper or sapolio, cover this ball with a firm layer of cotton and a piece of animal membrane, called gold-beater's skin. Without a speculum, by means of a good

lubricant, introduce this into the vagina and place against the affected part.

Let thirty to sixty milliamperes pass for ten minutes. Follow this with the secondary induced current with thirty to sixty interruptions per minute through the rheotome. Begin with five-minute applications; increase subsequently to ten minutes.

After removing the covered ball thoroughly cleanse the surface of gold-beater's skin with soap and water, and immerse in a large-mouthed bottle containing some good antiseptic solution. Label the bottle with the patient's name.

There are several advantages in keeping electrodes covered rather than recovering each time the electrode is used. The principal one is that one or two treatments are required before the cotton is filled with the copper, and ready to enter the tissues. For the cure of the inflammation in question everything depends upon the germicidal and astringent properties of the salts of copper formed when the metal combines with the body fluids.

In a limited number of cases, uterine, or, oftener, ovarian neuralgia, is the cause of dysmenorrhea. This is frequently found in young girls.

For sedation the positive pole of the constant current is very effective.

It is generally applied per vagina as for inflammations.

The Oudin or high frequency current from the Tesla coil, administered with a glass vacuum electrode for five to eight minutes, three or four times a week, is often successful also.

The two forms of treatment may be combined on alternate days.

I always prefer to give the two treatments when indicated on the same day and let the patient rest a day or two between treatments.

As an adjuvant to medication and the general hygienic and dietetic régime static electricity in the form of static insulation has unquestioned merit. That patients gain in weight, that red blood cells increase in number, that arterial tension is lessened and lost equilibrium is restored, tends towards regulating the menstrual function.

With better education these modalities will become more widely appreciated, and physicians less frequently will be disposed to recommend pregnancy as a last resort.

IONIC SURGERY IN RECTAL CANCER.

Benton Massey, in the *New York Medical Journal*, gives the following description of the technique of this mode of treatment:

The technique, in brief, is as follows: For a growth in the anal region or lower third of the rectum, and involving the sphincter, the bipolar method is employed, consisting in surrounding the growth with zinc mercury positive needles, inserted in the healthy tissue just beyond the edges and apexing in the deepest portion of the growth, and placing the negative electrode in the center, a direct current of about 2,000 milliamperes being then turned on. In twenty to twenty-five minutes the whole of the included tissue and a little beyond is impregnated with the ions of the metals, deviating and turning it a whitish gray. A general anesthetic is essential during the short time in which the current is turned on.

When the growth is above the sphincter, the unipolar method is employed, in which the negative pole is removed to a large pad under the patient's back and the active needles, so insulated that they are active only at their tips, are inserted in the growth. A very great advantage of the unipolar method in cancer confined to the structures above the sphincter is that a very heavy current may be thus employed without interfering with the sphincter muscle or the anus proper.

In both cases the practically sterile slough separates in about fourteen days, leaving what should be a healthy wound.

Should remnants of cancerous tissue be discovered in the wound during the period required for granulation, minor applications, which are then practically painless, may be pushed daily in a further effort to destroy all infected tissue.

Of the fifteen cases in which this method has been employed by myself, seven have been successful, seven have been either local failures or failures due to metastasis, and one patient succumbed some ten hours after the operation.

Chronologically arranged, eight of these patient were under treatment prior to 1905 and have been fully reported elsewhere, four of them being cured, two of whom report to me regularly and are known to be perfectly well at the present time; one has since died, cause unknown; and one has been lost sight of.

The histories of the seven patients under treatment since 1905 may be briefly summarized as follows: Three are well, as ascertained by recent inquiry; two were local failures due to extension of the bladder; one a failure due to metastasis; and one died shortly after operation, as mentioned before.

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X-RAY DIAGNOSIS OF PREGNANCY.

McLean and Hickey, in the *Journal A. M. A.*, report the following case, which illustrates the aid which the Roentgen ray may afford in the differential diagnosis between pregnancy and fibromyoma of the uterus:

Mrs. B., aged 33, was admitted to Harper Hospital November 7, 1911. Since the age of eleven she has been the subject of convulsive attacks, probably of hysterical origin, from which she is aroused with difficulty. She is the mother of three children, all of whom were delivered normally and are well at the present time. Twelve months before her admission to the hospital her menstruation ceased and has not been present since that time. Following the stoppage of her menses there has been a gradual enlargement of the abdomen which on palpation was found to be uterine.

Previous to her admission to the hospital, she had been examined by several physicians who were unable to make a positive diagnosis of pregnancy. There was no history of nausea or vomiting. The breasts showed no enlargement or pigmentary signs. The patient was very fleshy, her weight being about 250 pounds. The abdominal walls were very thick and quite relaxed. External manual examination failed to reveal anything which could be suggestive of a fetal body. Careful stethoscopic examination did not reveal the fetal heart-beat. Vaginal examinations showed a slight softening of the uterine os. No ballottement could be elicited. The differential diagnosis lay between large fibromyomata of the uterus and pregnancy. Accordingly the day following her admission, two X-ray exposures were made, each of four seconds, and the Roentgen rays were directed laterally by cone-shaped means of a large cone-shaped diaphragm through the pendulous abdomen. Both plates distinctly showed the spine, the thoracic cage, and the legs and arms of a well-ossified fetus. The fetal head could not be distinguished. Accordingly from the examination of the X-ray plates, a diagnosis was made of pregnancy with the fetal head in the pelvis. On December 15 the patient was delivered of a normal baby girl by forceps, the position being right occipito-posterior. The mother and child both did well and left the hospital on December 24, 1911.

In a paper read before the Michigan State Society, September, 1911, one of the authors (Dr. Hickey) suggested the value of the Roentgen ray in differential diagnosis between fibroid of the uterus and pregnancy. This case illustrates the ease with which such a diagnosis can be made and shows how the element of uncertainty can be eliminated in many

cases in which the thickness of the abdominal walls and the obesity of the patient make the ordinary manual examinations difficult.

If the exposures are short and made with an exact technic, they should not be attended with any danger to the mother or to the fetus. Roentgenologists have for some time been somewhat diffident about making these examinations owing to the fear of injury to fetal life. The improved technic, notably with the recently improved intensifying screens, in which exposures last practically only one or two seconds, however, should do away with any such fear.

❖ ❖ ❖

TREATMENT OF VERONAL POISONING.

There is no special antidote for veronal. The stomach should be washed out at once, and when clean a saturated solution of some saline in large dose should be introduced in order to thoroughly remove all of the drug that has not yet been absorbed. After that, the indications are two-fold: to combat symptoms as they appear and to wash the drug out of the circulation as much as is possible. In mild cases it will be sufficient to keep up the activity of the kidneys by means of copious draughts of water, Murphy salines and diuretics. In severe cases the treatment would be almost identical with that of uremia (hot packs preceded by pilocarpine injections, milk diet, venesection followed by hypodermoclysis or intravenous infusion). Hypodermoclysis or intravenous infusion of saline should be repeated two or three times a day if there is no response. If the veins are prominent, the latter can be done very easily without cutting down upon them following the method for injecting salvarsan and can hardly be classed as an operation. If a sterile solution of pure salt in distilled water is used and the solution is filtered through sterile filter paper, there never will be any chill or other untoward after-effects which could make one hesitate in employing the method. Purgation should also be repeated daily.

Cerebral symptoms require the same treatment as in morphine poisoning (hot coffee by rectum, caffeine, strychnine and camphor hypodermically). If there is evidence of a weak heart, strophanthin or digipuràtum may be injected intravenously or intramuscularly and the other heart stimulants (camphor, sparteine) may be necessary. Alcohol or ether by mouth or injection should be avoided owing to the greater solubility of veronal in these media. Cyanosis and signs of respiratory failure demand strychnine, oxygen and faradization to the phrenics.

The treatment otherwise is on general principles. Nutrition must be kept up, and if necessary the patient should be fed through the nose. Aspirations must be carefully avoided by posture and careful nursing. If urine is not voided spontaneously catheterization at regular intervals must be ordered.

❖ ❖ ❖

NUCLEIN AS A SURGICAL DRESSING.

Redfield, in the *New York Medical Journal,* after quoting Vaughan's studies on the effect of nuclein on the multinuclear white cells of the blood and a rather extensive and on the whole promising clinical experience, decided to try the effect of the nuclein solution as a local dressing for certain infected wounds. The first case thus treated was that of a printer, who had fed his index and second finger into the press, which produced severe crushing of the first phalanx. The wound was washed slightly and dressed with sterile gauze soaked in nuclein solution full strength. Five days later, the dressing having been kept soaked with nuclein solution, the wound was completely healed. A number of striking cases are quoted, on the basis of which the author invariably uses a nuclein dressing when he expects trouble from infected wounds.

COMMUNICATIONS.

A REMEDY FOR CONGESTIONS.

Editor MEDICAL BRIEF:

OF late I have been receiving a large number of letters from physicians all over the United States, and even from foreign lands, inquiring for details about a mixture of mine which has been given to the profession through several magazines during the past six months.

One magazine made an error in publishing the formula which, if followed, would certainly lead to serious results, and I owe it to my brother physicians that a correct formula be given and that it be given as wide publication as possible. I would like to avail myself of the very extensive circulation of the BRIEF for this purpose.

Powdered acetanilid	10	ounces.
Powdered ammonium muriate	2	ounces.
Powdered citrated caffeine	1	ounce.
Powdered bicarbonate of soda	1	ounce.
Powdered bromide of soda	1	ounce.
English calomel	1½	drachms.
Phosphate of codeine	1½	drachms.
Salycilate of soda, *true*	13	drachms.
Total	1	pound.

The ingredients of this mixture should be sifted through a fine sieve ten times in order that they be thoroughly mixed.

Ten grains of this powder constitutes an average dose for an adult weighing one hundred and fifty pounds, and the dose for children should be one-third greater than the amount determined by Young's system of dosage. As an illustration, Young gives the dose for a child of two years as (twelve plus the age, divided by the age) twelve plus two equals fourteen, divided by two equals one-seventh. The dose of my mixture for a child of two should be one-third larger than one-seventh of ten grains, or about two grains.

This gives about one-eighth of a grain of codeine to ten grains of the mixture, which is a safe anodyne to give to both children and aged persons in the amount properly dispensed.

This mixture should *never* be written on a prescription or sent to a pharmacy for preparation. It is an exclusively physician's personal preparation which should not be permitted to be dispensed by druggists to their counter patients. The advantages of this remedy are many. It acts physiologically to divert the blood from the vessels of the internal organs to the superficial capillary area, antagonizing internal congestions which constitute the commencement of nearly all inflammatory disorders.

It serves to "bleed" the sufferer from sthenic congestive tendencies into his own blood vessels, securing all the advantages of rapid depletion of congested areas without loss of vital fluid.

It also deters over-stimulation of nerve action which results in excessive blood determination with consequent local injury, and distress. It acts directly to relieve pain. It counteracts the abnormal acidity which all inflammatory conditions of the body tend to produce in the blood through toxic products dumped into the current in nature's efforts to restore health.

It brings the blood in increased amount near to the surface where the cooling effect of the atmosphere allays excessive heat of fever. It calls into immediate activity the excretive function of the skin, serving to promote generous elimination of toxic body products that otherwise would act as paralyzers of vital force and retarders of health restoration.

It urges excretory activity of the liver, kidneys, intestines and mucous membranes of the bronchial tubes.

Acting as I have indicated, it comes the nearest to being universally indicated in all forms of congestive and inflamma-

tory diseases of any remedy ever discovered.

It may be prescribed with propriety before a diagnosis is made in any acute disease accompanied by fever and pain.

When at a loss what remedy is indicated to secure best possible results, this substance may be at once administered with perfect confidence that nothing but good results will follow.

It is not contra-indicated by any condition except a heart badly crippled by organic disease of the valves, or moribund symptoms.

A careful analysis of the ingredients of this mixture and the way in which each one acts to do its work and also to hold in check any deleterious activity of some other, will make plain the reasons for the rather extravagant statements which I have made, but which are given with the utmost confidence in their absolute correctness.

A. D. HARD, M. D.,
Marshall, Minn.

THE COLON BACILLUS.

R. T. Morris, in the *Journal A. M. A.*, suggests that the colon bacillus may be at the present time the chief regulator of population and cause of the decadence of old age. Bacteria, which formerly caused disastrous epidemics, are practically under control through the progress of preventive medicine, but other bacteria, and especially the one in question, are still carrying on nature's plans of reducing excessive population. The reason that the activities of this group of bacteria have been so long ignored is that the methods of search for them are of recent development and do not yet cover all the field. While we recognize the destructive activity of the colon bacillus in gangrenous appendicitis, we do not so often trace its activity from this source to distant parts, such as infections of the pylorus or duodenum. From his point of view, the colon bacillus is often the original malefactor in these cases, though the adhesions that it produces in the upper abdomen are often overlooked by the physician.

He believes it to be the frequent cause of ulcers of the stomach and duodenum, and its activities in gall-stone diseases have also been recently recognized. Pancreatic disease and diabetes can also be thus produced, and the proliferation of connective tissue which it causes is, he suggests, also seen in most cases of arteriosclerosis. The toxins it produces also attack the nervous system, and it may thus cause neurasthenia. If we are to assume that the colon bacillus is the cause of arteriosclerosis, we can easily rank this organism with the tubercle bacillus in increasing the death-rate. Experimental injection of the colon bacillus into the circulation has caused spinal disturbances, and Dr. H. G. Harris has found it abundant in the urine of a patient with infantile paralysis. One of these disorders, colon bacillus intoxication and infantile paralysis, may prepare the way for the other. One of the largest groups of cases in which the influence of the colon bacillus is overlooked by clinicians is the infections of the kidneys, and this is specially unfortunate since we can so readily control its growth in the urine by hexamethylenamin and benzoate of soda, as has been shown by W. H. Thomson. From the rectum it may readily affect the neighboring organs through the urethra and the vagina and be the cause of intractable leucorrheas, tubal infection, urinary incontinence and sterility. Its effects are sometimes so remote that it is not suspected, and Morris mentions, as an instance, a case of chorioiditis cured by operation for appendicitis.

NOTES AND MISCELLANY.

MORPHINISM.

Bartlett's monograph on "Morphinism, Its Rational Treatment and the Mental Attitude of the Medical Profession in Relation to this Disease." Just off the press, and will be sent free to practicing physicians. Address C. H. Bartlett, 612 Princess Building, St. Louis, Mo.

NEW POLYCLINIC HOSPITAL.

The New York Polyclinic Hospital recently opened its fine new building at 341 West Fiftieth Street. It is absolutely fireproof.

All the wards, both private and public, are above the roofs of surrounding buildings, so that patients will enjoy both sunshine and quiet. A special sun parlor has been constructed on the roof.

The new hospital site was decided upon several years ago, and the structure now nearing completion was commenced in 1910 after an agitation for a new plant had been carried on for sixteen years. The hospital staff and patients will be moved from the present building at Thirty-fourth Street and Second Avenue about May 1.

THE CARELESS USE OF CATHARTICS.

The evil effects resulting from the indiscriminate use of cathartics and drastic purgatives is only too well known to every practitioner. Drastic cathartics, while producing the effect which the patient thinks is desirable, leave the secretory functions of the liver in an enfeebled and exhausted condition, so that a return to the constipated state is certain. In such conditions the physicians will find Chionia a most valuable assistant, combining it with an occasional cathartic when indicated and gradually diminishing the dose of the cathartic employed. The administration of Chionia should be continued some time after the cathartic or purgative has been discontinued.

THE PROGRESS OF OXYOLINE THERAPY.

The merits of Oxyoline treatment for cases of incipient tuberculosis, neurasthenia, melancholia, diseases of the respiratory tract, and all diseases where sub-oxidation is a prime factor, are no longer disputed. The reports of hundreds of physicians on thousands of cases have conclusively demonstrated the fact.

The invention of Dr. Wm. Neel, of Chicago, is an apparatus whereby ozone reacts on the terpenes of hydrocarbon oils, forming the medicament, Oxyoline. Literature regarding this subject, together with the Oxyoline Bulletin (a bi-monthly journal devoted entirely to this subject) will be sent to interested readers, addressing Neel-Armstong Co., Akron, Ohio.

CONVALESCENCE FROM THE EXANTHEMATA.

The first two or three months of the year are usually characterized, in the experience of the family physician, by the occurrence in his practice of a crop of cases of the contagious diseases of children, especially scarlet fever, measles, German measles, etc. This is accounted for by the readiness with which contagion is spread in the schools, when ventilation of the school room is the least perfect and the closer housing of school children during school hours favors the distribution of communicable diseases. As the diseases in question are self-limited in nature, expectant and symptomatic treatment, together with precautions as to isolation, etc., is about all the physician is called upon to direct. It is

well known, however, that in all but the mildest cases, the adolescent subject of scarlatina, or measles, is usually more or less debilitated or devitalized, when convalescence is established. Special care should be taken to avoid the administration of any tonic or reconstituent which is likely to disturb the child's digestion or, by inducing constipation, to minimize the appetite or desire for food.

Pepto-Mangan (Gude) is the ideal reconstructive tonic for these young patients, because it is pleasant to the taste, easily tolerable by the stomach and readily assimilable by blood and tissue and promptly efficient in restoring appetite, strength, color and general well-being.

NEW AND UNFAMILIAR REFLEXES.

Meyerson, in the *Interstate Medical Journal*, gives the following summary:

1. A series of reflexes can be elicited by striking the ulnar styloid process. The responses consist of a contraction of the triceps, the deltoid, and in some cases the scapular muscles.

2. A series of adductor responses, both homolateral and contralateral, can be elicited by striking the following points:

(a) The internal condyle of the humerus; in which event the homolateral adductions are stronger than the contralateral.

(b) The tibia; the homolateral responses are stronger than the contralateral in this case.

(c) The sole of the foot; in this case the contralateral responses are stronger than the homolateral.

(d) The external condyle; the contralateral responses are stronger than the homolateral.

(e) The anterior superior spine of the ilium; here also the contralateral responses exceed the homolateral in intensity.

The reflexogenous zones were variable and often very broad.

Correlations:

(a) The breadth of the zones and the liveliness of the reflexes is generally in direct relation to the tendon reflexes of the individual.

(b) The adductor responses have no relation to the ankle-jerk or Babinski phenomenon, but bear a direct relation to the knee-jerk.

(c) A moderate tibial and internal condylar adductor response is present in many "healthy" individuals.

(d) Very lively adductor responses, especially the contralateral type, elicited from the spine of the ilium and the internal condyle, give a sign of organic disease. Wide reflexogenous zones constitute a significant phenomenon.

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I took a good look at his lungs.

"And when I developed the picture—
Now don't tell your sisters and aunts,
For it sounds just a little bit shocking—
I discovered the seat of his pants!"

—CHARLES EDWIN JULIAN, in *Munsey's*.

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HENRY R. STRONG PUBLISHER T. G. ATKINSON, M. D., EDITOR

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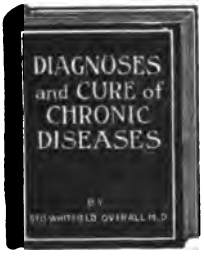

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The Medical Brief

A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., June, 1912. No. 6.

EDITORIALS.

SEX EDUCATION RUN TO SEED.

WE are becoming a trifle weary both of receiving and of reading books and pamphlets and lectures and articles upon the subject of sex education. We confess to the rather heretical opinion—for which we expect to be severely castigated, but we confess to it just the same—that the thing is being a little overdone. Not that we have any patience with the so-called "conspiracy of silence" which would keep, and for many years has kept, the young boy and girl, the young man and woman, in deplorable ignorance concerning his and her sexual relations; or that we are not in sympathy with a movement to break through the conspiracy and give the young people their birthright of knowledge in these matters. We are not of the purblind who mistake innocence for virtue, nor the mock-modest who shy at calling a spade a spade and are shocked at the mention of plain truths. We believe most thoroughly and unconditionally in a policy of frankness and enlightenment in this, as in every other matter pertaining to physical, mental and moral wholesomeness of living. But we are of opinion that the reform in this direction, like most reforms (at least on this side of the ocean), has been something too sudden and violent to savor of sanity or real efficiency; so sudden that one really wonders how the world ever managed to get along before its time; so violent that it has overleaped itself, and in many respects degenerated into a physical "muck-raking" of nasty details which the informing spirit of the movement never contemplated.

Take the matter of venereal disease, for example. It is well enough that the youth of the country, both boys and girls, should know and keenly appreciate the menace to life and health that lurks in the illicit (and ofttimes in the licit) indulgence of the sexual passion. It is inexcusable that young men and women should be permitted to remain in total ignorance of the existence of such things as gonorrhea and syphilis until they learn of them by personal acquirement of the diseases themselves. Virtuous or otherwise, it is the right of the boy and girl to know of such things, for, as we all recognize, the innocent are often the worst sufferers from ignorance. So, we repeat, it is not only highly proper, but absolutely essential, that our young people should be made to realize, in no uncertain fashion, the prevalence and enormity of the venereal peril. But that does not, as we view it, necessitate putting into the hands of every boy and girl a detailed description, with illustrations, of the horrible pathology and symptom-complex of the venereal diseases, or treating them to repeated series of semi-clinical lectures ("for men or women only") on genito-urinary complaints. Yet that is about what the literary and platform propaganda of sex hygiene and prophylaxis amounts to at the present time. Such a campaign does not, in our

opinion, tend to instil a sentiment of wholesome fear into the minds of boys and girls, but the reverse. Familiarity breeds contempt. Ricord relates how he once conducted a young man, at his father's request, through his venereal wards at the Hotel Dieu for the purpose of impressing on the youth the dangers of promiscuous sexual indulgence. Unfortunately, the effect on the young man's mind was not quite what was intended, for at the conclusion of the demonstration he said to the physician: "I see, M. Ricord, and when I am so unfortunate as to acquire a venereal disease I shall come to your excellent hospital and call on your marvelous skill to cure me of it."

The same criticism applies to the educational crusade in every aspect of the sexual question. It is hardly necessary for the purpose in hand that the young man or woman should be shown, as it were, kinemategraphic or camera-obscura views of the sex life, from beginning to end, with all the intimate details. With all of our belief in the policy of plainness and outspokenness in such matters, we do not forget at the same time that a most potent factor in the preservation of any temple is a certain degree of sanctity. It need not, and should not, be the sanctity of superstition; let it be the sanctity of knowledge, by all means—but still sanctity. We need not believe or teach any longer that the holy of holies contains an unapproachable Presence, but we need not therefore make a gossip-chamber or a smoking-room out of it. We repeat, familiarity breeds contempt; and the fact that the fulsome details with which the youth of today are being satiated concerning sex life are the correct details, instead of the distorted details with which forbidden literature used to regale them, does not alter the force of that maxim.

And, as a last word, we beg to point out that, when all the advantages of an educational campaign in sex matters have been enumerated and conceded, it can not be supposed for a moment that mere education in the facts of sex science will suffice to check sexual indulgence or to stay sexual immorality. Education, of itself, has never been known to influence morality, and we have no reason to suppose that it ever will. After all, in spite of the sneer of the skeptic, and with a full appreciation of the benefits of sheer enlightenment, it is to the moral appeal that we must look for this achievement. All of the broader knowledge to which we are admitting the public on the subject of sexual relations will count but little in the fight against sex evils, if we do not build upon that broader knowledge proportionately broader and higher *ideals* of life and conduct. The time has come, we think, for this superstructural work to begin.

* * *

LEGISLATION GONE MAD.

HOW is it that the medical profession, which, of all professional bodies, is the greatest stickler for conservatism and stands in the greatest abhorrence of everything that savors of quackery, lends itself so readily, nay even eagerly, to that most brazen of all quack remedies for social and economic ills, the nostrum of the law? What would be thought of, and done to, the physician who should keep a big bottle of Guaranteed Pain Killer or Anti-Morbid Solution on his shelf, and to every patient who came to his office or called him to his home he should dole out a good stiff dose of this same cure-all preparation, with positive assurances to the sufferer and his anxious friends that it would not only cure him of his present trouble, but effectually protect him from all recurrences of a similar nature? Yet that is practically what the profession,

in the person of its medico-political representatives, is doing in respect of all the conditions of the body social with which it feels called upon to deal.

We recall at one time reading or hearing an amusing story (we believe from a French source) of an impudent charlatan who purported to cure every ailment by means of a rectal injection, perhaps of pure water, perhaps of some solution of his own compounding, it makes no difference. This happy-go-lucky practitioner was upon one occasion sent for to attend a man who had accidentally got a large fish-bone in his throat and was in momentary danger of choking to death. Catching up his trusty syringe, our quack hastened to the house, where he found the patient in bed attended by his servant. During the preparations for administering the injection the servant evinced great indifference to the proceedings, and persisted in hanging out of an open window gossiping with a friend below, which so angered the quack that he suddenly shut the window down on the servant's back and administered the enema to the imprisoned and squirming domestic. The master laughed so heartily at his servant's discomfiture that he coughed up the offending bone and promptly recovered, which led the quack to comment solemnly upon the unfailing efficacy of the injection treatment, adding, "it does not even matter to whom you administer it."

The moral (or lack of moral) of the story might, we think, be well applied to the indiscriminate and credulous appeal to law by which the medical profession of today, in common with other bodies of men, foolishly expect to remedy social and economic evils. But, unfortunately, it has more than a ridiculous side. It has, so far at least as the medical profession is concerned, the very serious effect of defeating the very purposes that it is intended to carry out. If it be true, as scripture has it, that "They that take the sword shall perish by the sword," it is equally true that whosoever appeals to the law shall perish by the law. Every legal enactment which is placed on the statute books through the influence of organized medicine, whether that influence be properly or improperly exercised, puts into the hands of the enemies of organized medicine a weapon with which to attack it and discredit it in the eyes of the public. Every time the medical profession, through its politicians, seek to have its views and opinions upon matters pertaining to public conduct codified into law, and imposed upon the public, the sects and cults who take issue with such views and opinions seize the opportunity to call attention to the "arrogance" and "oppression" of regular medicine, and to arouse a feeling of resentment against it. And, it must be confessed, there is an element of reason in such an attitude, no matter how benevolent the purpose of organized medicine may be—at least enough of the reasonable element to bring about an insidious suspicion and distrust of its motives.

Almost any procedure may justify itself upon the plea that there is nothing better available and that the necessity is urgent. And if legislation were the only, or even the chief, means by which the purposes sought are to be brought about, then it might be wise to resort to it even in the face of the probable consequences here pointed out. But it is not even the logical or most effective course to pursue. Such matters are properly matters of education, not of legislation. Legislation should be the crystallization of already prevailing public sentiment, not an artificial attempt to precipitate it, which will always result in a cloudy confusion. Only the most settled and established truths and principles of action are proper subjects for legislation; and everybody knows that in medical science these are exceedingly few and far between. Hence, as we have said, there is a strong element of reasonableness in the appeal made to public sentiment by the cults and sects against the enactment and enforcement of medical opinions into laws—however well-

intentioned such attempts may be. To a propaganda of instruction and education in such matters there can be no objection whatever. That is both the right and duty of the medical profession, and is, in the end, far more effective. Dr. Henry B. Favill, of Chicago, in a recent address before organized medicine, shrewdly perceived and aptly gave utterance to this very view of the subject. He pointed out that:

"The activities of the profession in political matters have brought about considerable criticism from a portion of the public. We have been accused, among other things, of being a professional trust, of using trades union methods, of abandoning our high ideals and stooping to political methods, etc. Because of these disagreeable statements he thought it the part of wisdom to at once abandon our efforts along political lines and depend altogether on our efforts to educate the people."

Wise words, which we heartily endorse, and to which we venture to add the very applicable admonition of Shakespeare:

> Be advised;
> Heat not a furnace for your foe so hot
> That it do singe yourself. We may outrun
> By violent swiftness that which we run at,
> And lose by over-running.

Some Results in Tuberculosis.

By EDGAR P. WARD, M. D., Ph. D., St. Louis.

IN THIS ARTICLE Dr. Ward takes us a little further into the principles of his serum treatment of tuberculosis, upon which he has written once or twice before in this journal, and in which our readers have evinced great interest. He also backs up his position by a further series of quite conservative case reports.

The beginning of serum and vaccine therapy is to be found in the investigations into the nature of immunity which followed on the demonstration of the bacterial origin of infectious disease. Though bacteriology, as we know it today, is a science of very recent growth, whose most rapid and important developments have taken place during the last thirty years, yet the belief in "animalcules" as the cause of morbid processes in man is a very old one. It was only with the discovery of the compound microscope in the seventeenth century, however, that it became possible to prove the reality of these minute living forms. In the latter half of that century, Leeuwenhoek, a Dutch naturalist, announced his discovery of the presence, in rainwater, in diarrheal evacuations, in the tartar of the teeth, etc., of minute living "animalcules," which he described accurately, showing that they were differentiated from each other by size and shape, and also in many cases by motile power. Although Leeuwenhoek himself made no medical application of his discoveries, others did so, and the "animalcule" or "germ" theory of disease was promulgated, to explain the causation of many morbid condition then ill-understood. Plenciz, of Vienna, in 1760, further developed this doctrine, declaring the contagium to be a living substance capable of multiplying within the body, and possibly of being transmitted through the air. From time to time additions were made, by different observers, to what was known of the nature of "germ" diseases, but it was not until about the middle of the nineteenth century that the foundations of the modern science of bacteriology were laid by the research of Pasteur.

In his early chemical investigations, Pasteur had devoted some attention to the subject of fermentation, and had come to the conclusion that it was caused by the action of minute living organisms. His interest in the subject was revived by a controversy which arose as to the "spontaneous generation" of microörganisms. Taking up the matter in this connection, he was able, by patient research, ingenious experiment and strictly scientific methods of procedure, to demonstrate beyond doubt the truth of his earlier conclusion, and also to prove that putrefaction was a true fermentation, and due, therefore, to microbic growth in the putrescible substance.

Pasteur's work in this direction marks an era in bacteriological study, not only on account of its stimulating influence and the power of its suggestion for all future work of a like nature, but also for its special applications, which, in the domains of medicine and surgery, have given invaluable results. Aided by Pasteur's discoveries, Lister was enabled to bring to a successful conclusion a long series of researches, and to enunciate the principles of the antiseptic system of surgery. The investigations of Pasteur at this time, together with those of Tyndall, also had the result of effectually disposing of the myth of "spontaneous generation," and establishing finally the law of Harvey, *"Omne vivum ex ovo,"* or *"Omne vivum ex vivo."*

Having settled the question of the microbic origin of fermentation, Pasteur was led to study the part which micro-organisms, fermentation and putrefaction play in the diseases of man and animals. Among other diseases, he turned his attention to anthrax, on which Koch was also working. By their investigations, both the specific microbe and the mode of transmission of the disease were discovered. Pasteur, pondering over possible preventive and curative measures, considered the significance of vaccination against small-pox, and came to the conclusion that vaccinia and small-pox were identical. When a man, therefore, was vaccinated, he was in reality inoculated with small-pox, the virus of which had been weakened by its passage through the cow; the result was that he suffered from a mild or benign form of the disease, which protected him against further attacks. Recognizing that the same principle might be applicable in other cases, Pasteur, after many experiments, found a means of obtaining a culture of the organisms of anthrax, which was of low virulence and which rendered sheep inoculated with it immune to inoculations of more virulent strains.

The possibility of protective inoculation with an attenuated virus having thus been demonstrated, Pasteur and others set about producing vaccines for other diseases, the most notable success being the preparation of the hydrophobia vaccine. Koch at this time was also doing valuable work in the demonstration and investigation of the specific microbes of various diseases, such as tuberculosis and the pyogenic affections. Through his and Pasteur's researches the two important principles of microbic specificity and protective inoculation were established.

These successes naturally directed attention to the nature of the immunity conferred by protective inoculation with attenuated virus, and to the character of the changes which might be supposed to take place as the result of such inoculations.

The question of natural immunity also came in for consideration. *It was clear that immunity must be due to some means of defense possessed or created by the body cells or the body fluids or by both.* and investigators therefore began to study these.

Cohnheim discovered the phenomenon of the migration of leucocytes, and Metchnikoff's observations on the bactericidal power of these white cells, embodied in his theory of phagocytosis as the essential factor in natural and acquired immunity, greatly advanced the conceptions of the resistance offered to infection by the animal organism. *In connection with the study of the reactions between the body fluids and bacteria the remarkable discovery was made that fresh defibrinated blood and the fresh blood serum of various animals have the power of killing bacteria in the test-tube;* and that this action is frequently selective, killing one species of organism and not another. *This was followed by the further discovery that the bactericidal power of the blood serum towards particular microörganisms was greatly heightened by systematic injection (or immunization).*

This résumé of serum therapy is drawn from authentic scientific sources. Yet none of these eminent scientists has discovered anything satisfactorily successful for the treatment of tuberculosis. Koch, in his research work, developed tuberculin, on which his hopes, as well as the hopes of the medical world, rested for many years. These results have proven disappointing, and today Koch's discovery is used largely as a diagnostic agent. Many followers of this theory have attempted to make an improved or new tuberculin, or some substance of allied nature for which some claims of success are made, but results have not placed their merits above dispute. Vaughan, in his research work with nu-

clein, has demonstrated that elements in the blood are the prime factors in the cure of tuberculosis, and it was this theory, and the failure of tuberculin and its allied products to fulfill the expectations and claims of their authors that led me into investigations of serum therapy, based upon normal blood constituents. These investigations were started in 1903 and continued until 1908, a period of five years, when I was able to produce the normal anti-bodies of the blood in the goat. These anti-bodies, suspended in normal saline solution, I have termed "leuco-lexin," the name being taken from the leucocytes, which are the scavengers of the body, and alexin, which includes all of the normal anti-bodies of the blood. Remarkable results were obtained in the experiments, and during the past three years its value has been demonstrated in the successful treatment of tuberculosis by immunizing the system with normal nucleinic anti-bodies. I have appeared before numerous medical societies in advocacy of this theory of treatment, and in a paper read before the Chicago Academy of Medicine in January, 1910, have clearly demonstrated from case reports that my theories in connection with normal anti-bodies for the treatment (and care) of tuberculosis, or any insidious disease of like character, is unassailably correct.

A careful analysis of the following case reports of cases of tuberculosis treated by myself and other physicians who are accustomed to analyzing results are offered for earnest consideration by the profession. It does not make any difference in the treatment of these cases whether you have a definite percentage of cures that average high to the number of cases under treatment, but if you take one of these poor mortals and are able to do something for him, either in the way of improvement, cure, or placing him in a position where he is able to follow his usual or some other vocation, so that he becomes a self-supporter, and not a dependent upon his immediate family or friends, then you are *doing something,* and in this day and generation we must be able to show our patients that we are really accomplishing beneficial results.

Jas. McB. Age thirty-two. Occupation, insurance solicitor. This case, when first brought to my notice, was decidedly the worst case of pharyngeal and laryngeal tuberculosis it has ever been my misfortune to come in contact with. The young man was completely exhausted, and could scarcely walk twenty steps without sitting down to rest. He had had a number of severe hemorrhages prior to this time. Temperature varying between 101 and 103. Pulse between 100 and 140, respiration between 30 and 50.

He was placed on leuco-lexin in large doses, with frequent repetition. When I first saw the case, in consultation with a confrère, I did not think he would last two weeks. Under leuco-lexin he greatly improved, and in two months' time was out on the street selling insurance. He was under treatment most of the time for eighteen months. In January, 1910, he contracted a severe attack of pleurisy, and died as a result of a pulmonary hemorrhage. The very fact that leuco-lexin was able to put him on his feet and enable him to earn a living for nearly one and a half years speaks well for it.

February 16, 1908.—Nellie D.; age, twenty-eight; married ten years; five children. Family history: Knows nothing of father; mother died at sixty-six of tuberculosis, sick ten months; has three brothers living, all healthy; one died from small-pox; two sisters living, both healthy. Husband is a wall-paper cleaner, and is said to have had tuberculosis for three years. Personal history: Has been a wash woman. Had chorea at ten years of age for five months; fully recovered. Physical history: began to decline in health about eighteen

months ago, when she weaned twins at the age of nineteen months. Lost ten pounds in eighteen months. Had a severe pain in the apex of the left lung, and severe cough; pulse, 110; respiration, 28; temperature, 100. Treated with leuco-lexin for six months, and discharged as cured, the lung giving a clear respiratory murmur, except in the apex of the left lung, where it was rather rough, due to the formation of scar tissue.

October 31, 1911, patient returned for examination. No tubercular bacilli present. Patient showed every indication of being in perfect health.

February 1, 1909.—Miss M. C. Age, seventeen; Louisville, Ky. Family history good, excepting mother, who died at the age of forty-eight with grip-pneumonia. One brother died at the age of nine and one at seventeen of typhoid; one at nineteen of pneumonia, sick eight days.

Personal history: Measles at six years, had whooping cough in March two years ago. Also had a hemorrhage in the summer of 1908. Physical examination: Temperature, 99; pulse, 84; weight, 112. The patient was treated with leuco-lexin for two months, and returned to Louisville very much improved, though not completely cured. Occasional reports through a sister show that she is physically well at this date, March 27, 1912.

January 18, 1910.—Mrs. E. G.; age, thirty-five; social relationship, married; has two children, sixteen and eighteen years of age. Father living, eighty-seven years of age, health good. Mother died at fifty of typhoid-pneumonia. Has one brother living, age forty, good health. Has two sisters living, forty-eight and forty-six in good health. One died at the age of thirty-eight with intermittent fever (?). Another died at the age of thirty of tuberculosis.

Personal history: Had typhoid fever at twenty-one years of age. Made apparent good recovery. Had grip in spring of 1909, followed by pleurisy and severe cough. Physical history: Had chill every day since March, 1909, followed by fever and profuse sweating. Temperature, 103. In March, 1909, her weight was 107 pounds, appetite fair. These chills last for an hour. Fever lasts for about five hours. On admittance to Mount St. Rose Hospital, pulse 120, respiration, 32; temperature ,102. Upper third of left lung was involved, small cavity on line with the heart. Placed under treatment of leuco-lexin, which was continued every other day. February 28, 1910, pulse 80, respiration 24, temperature 99. Has had no chills for ten days. March 15, 1910, left the hospital and returned to her home very much improved. Treatment was discontinued, but in December, 1910, reported by mail that she was improved, but was not yet well.

January 29, 1910. Mr. P. D. Age twenty-four. Single; electrical worker. Father died at fifty-nine with some bowel affection. Mother at fifty-one with pneumonia. One brother living, at twenty-nine, health good. One at thirty-four, health fair, having heart trouble. One sister living, at thirty-seven, health good.

Patient states that mother always had a cough. Personal history: Typhoid at fourteen years of age, fully recovered. Pleurisy two years ago, sick three days, both sides. Also five years ago, sick one week. Had a cough for two months. Began spitting blood four days ago, after cough, about half a cupful. Pulse 78, respiration 20, temperature 99. Patient is very thin, exhausted, and both lungs are involved. Placed on leuco-lexin, February 15, 1910. Temperature was 103, night sweats profuse, expectoration very profuse, tubercular bacilli in abundance. Treated regularly, but unable to do more than relieve distressing conditions. Died on June 30, 1910.

May 11, 1910. J. F.; age thirty-four; social relationship, married. occupation, farmer. Father and mother both living, in good health. One brother died at twenty-nine, with congestive chill. One died at twenty-nine with tuberculosis. One died at twenty-six with tuberculosis. One sister living at thirty-six, in good health.

Had measles at fifteen years of age. Had a cough all winter. Pulse 72, respiration 20, temperature 98.6. Diagnosed as tubercular pharyngitis. Treatment with leuco-lexin was continued for two months, with proper local antiseptics to the pharynx. Patient gained fifteen pounds, and being unable to find any tubercular germs in secretions of the pharynx, and as physically the man appeared to be in perfect health, was discharged as cured.

January 15, 1912. Patient reported at my office for examination, and is in perfect health.

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PERITONEAL ADHESIONS.

Richardson, in *Annals of Surgery*, thus summarizes a study on this subject:

Peritoneal adhesions are of two kinds, those which are useful and those which are harmful and dangerous.

It is futile to search for some agent that will banish adhesions from the realm of abdominal surgery, inasmuch as the processes involved in their formation are identical with those involved in peritoneal repair.

In dealing with peritoneal adhesions, the surgeon has recourse to three classes of procedures: (1) measures which prevent their formation; (2) measures which restrict their formation to the harmless variety; (3) measures which aid in their absorption.

Certain anatomical and physiological characteristics of the peritoneum have an important bearing on the problem of peritoneal adhesions; notably its extensive area, its remarkable absorptive power and ability to successfully cope with infection, the variable sensibility of different portions, the continuity of its endothelial surface, the rapidity with which it can form adhesions, and the completeness with which it can later absorb them.

Injury or death of the highly vulnerable surface endothelium is sufficient to set in motion the chain of pathological events which may terminate in dense adhesions.

Etiologically, there are a number and variety of factors involved, but they can all be grouped under the two heads—sepsis and trauma.

As specific prophylactic and curative measures, emphasis should be given to: (1) rigid asepsis; (2) the use of moist hot gauze; (3) careful covering of all raw surfaces; (4) avoiding unnecessary exposure; (5) restricting trauma; (6) gastroenterotomy and enteroenterostomy; (7) returning the viscera to their proper anatomical relationship; (8) spreading out the omentum over the visceral surfaces before closing the abdomen; (9) careful closure of the peritoneum. A number of additional safeguards are available which have been tested and proved to be of value under certain conditions. The most reliable of these for general use are: (1) viable grafts of omentum or peritoneum; (2) lubricants; (3) judicious ante- and post-operative therapy—especially with reference to posture, catharsis, enemata, and length of stay in bed.

The field of specific chemotherapy offers the brightest hope for future progress.

Success in the management of the more aggravated adhesion case depends largely upon accurate clinical diagnosis, followed by intelligent operative procedures.

In properly selected cases, the use of adjacent mesentery for covering raw bowel surfaces offers distinct advantages over all methods hitherto proposed.

Dr. Loeb's Mechanistic Theory of Life.

By Axel Emil Gibson, M. D., Beaumont, Cal.

ONCE more we venture to present to our readers a paper on some of the philosophical aspects of medical science. It is not so wide of practicality as might at first blush appear, for in these days, when the questions of biological processes and physical chemistry are agitating the scientific world, and modifying many of our physiological doctrines, it is surely of importance to the practitioner that he should know where he stands. The mechanistic theory of life has always been a fascinating one to scientists, and is always bobbing up in the various departments of natural science—even in medicine. Here we have a very able and comprehensive criticism of that theory—a presentation of the other side.

Materialism Not the Highest Aspect of Science.

Under the stress of his necessity in finding an adequate cause for the origin and rise of species, Charles Darwin took refuge to a "supreme power, in and through which the primitive species of natural evolution must be postulated to have had their genesis" ("Origin of Species"). Similarly, Herbert Spencer found in his "Unknowable the first cause to the phenomenal world;" while Thomas Huxley, in his "cosmic process, found a power that embraced the evolution of the universe in its entirety, introducing life, form and consciousness on the field of existence." ("Evolution of Ethics.") And again, Alfred Wallace, in his "Essays on Darwinism," makes the statement "that the Darwinian theory, even when carried to its extreme logical conclusion, not only does not oppose, but lends a decided support in a belief in the spiritual nature of man." Not less pronounced is Prof. Tyndall, who, in his "Reflections on Matterhorn," becomes a veritable Moses receiving his revelations on the height of an Alpine mountain peak, where he feels the "presence, magnitude and unspeakable awe of a Being which after all must yet have its essential characteristics in love, will and beauty."

The Transitional Character of Materialism.

The materialistic outlook on life represents a stage of transition intervening between eras of high spirituality. Like the seasons of the year with its rise and fall of vegetation, the mental life of man exhibits cyclic series of ascent or descent of spiritual consciousness. The high-tensioned spirituality of the early Christian faith, after having found its extreme tangent in the unreasoning superstition and letter worship of the middle ages, crystallized into the materialistic philosophy and non-belief of the 17th and 18th centuries—after which, however, the spiritual tide has been constantly rising in the mental processes of the world.

For dogmatism does not only grow in the field of religion, but also in the field of science. In the former case it gives rise to superstition and fanaticism, in the latter to skepticism and materialism. In either case its character is transitional and indicates overstrain and mental exhausture due to a divorcement between thought and feeling, intellect and simple faith, when speculation and theorizing furnish the only guidance for the mind in its attack on the riddle of the universe.

In most cases we underrate the value of instinct in the labors of the mind. For

a force which guides with such unerring safety the animal creation can not possibly be meaningless and futile in the thought-life of humanity. Nor can it be incidental that the profoundest and most startling revelations in science, art and philosophy have come to man at an age when his over-stimulated, sense-fed, passion-lashed ambition are on the wane, and the mind in consequence lapses into an attitude of calm serenity and stoic indifference to the scorn or plaudits of the world.

The success or failure which the materialist experiences in dealing with his problems are directly due to the acuteness and reliability of his senses, as it is in the propositions of the latter that he obtains his only recognized agency for knowledge and experience. Two men look into the same microscope; the one finds life, the other matter; the one sees the action of the spiritual impulse, the other the play of the physico-chemical process; the one is endowed with the vision of a Sir Herbert Crockes, Alfred Rudolph Wallace or M. Henry Bergion, the other with that of a Haeckel, Jacques Lock, Nietzche, or Max Nordau.

The old truism that seeing is believing has to be given up as false; while the very opposite holds true: believing is seeing. It is not the eye that initiates the individual into the mysteries of elemental existence, nor consummates his mental vision; it is the instinct, the feeling, the intuition of the mind, that lays bare the field of research and describes its phenomena. The eye merely verifies the data already rendered inevitable to the judgment through the keenness of feeling and the force of logic. Divorced from feeling, intellect becomes sterile and non-productive, losing itself in grooves of isolated facts.

Intellect invents, feeling discovers; the former construes formula, the latter reveals laws. The one studies the universe in terms of unity made up by diversities, the other in terms of diversities made up by units. To the one, existence presents itself as a chain of individual dependencies, sustained and kept in sequence by cosmic solidarity, while to the other existence is a box of dice precipitated at random into space and sustained by no other guaranties than that of chance, fortuity and game.

Why Does the Animal React Forwardly in Place of Backwardly to the Heliotropic Impulse?

The series of experiments in heliotropic reactions recorded by Dr. Loeb in a late number of *Popular Science Monthly* have in reality no other biological value than that of painstaking observations concerning isolated facts. As a gauge to Dr. Loeb's system of research we may at once refer to his opening statement that "as long as life-phenomenon has not yet found a physico-chemical explanation it remains inexplicable. If the veil is once lifted, we are always surprised that we did not guess from the first what was behind it."

As a means of demonstrating the "physico-chemical character of life," Dr. Loeb refers to tropism—the instinct of certain animals to fly or creep towards the source of light, a phenomenon to which he finds an explanation in the presence in their eyes and skin of photo-sensitive substances which undergo chemical alterations when exposed to light. Now, if the light rays strike the animal sidewise, the resulting physico-chemical reactions will affect a change in its movement corresponding to the angle of its advance, as the accumulated effect of the reaction products energizes the one side more acute than the other, thereby giving rise to a diversion in the tension of the symmetrical muscles of the animal, which again means a change in its attitude to the source of light. As the effect, however, of the photo-chemical charge gradually becomes exhausted, the muscular tension relaxes, and the subsequent swing on the pivot of reaction changes the angle of exposure to

the opposite side with a corresponding change of advance into the opposite direction. In a word, the photo-sensitive animal in its advance toward light finds itself in the same situation as a sailor cruising on the high seas to overcome the force of contrary winds by advancing in angles of opposite direction.

So far, so good. But there is a serious hitch in the argument; for while the wind-beaten vessel is held in line and kept from gliding backwards by the steering device of the helmsman—in the heliotropic cruise of the animal, apposed by incoming light waves, Dr. Loeb fails to consider the necessity of a conscious energy wielding the steering device so as to prevent the animal from the logical because by far the easier course of equalizing its angles of symmetry by moving *backwards.* For what in the name of cause and effect gives to the animal the power to react *progressively,* and to employ the photo-chemical reaction products toward an equalization of the lateral dissymmetry of its muscles so as to return to the biological straight line through a course of advance?

The Fulcrum, the Lever, and the Unifying Impulse.

For without a presiding center of consciousness the ordering into a homogeneous, symmetrical adjustment of the muscular reactions would be as unreasonable and impossible as for a vessel to sustain the aim of its cruise with no rudder to compel its advance. Yet Dr. Loeb dismisses entirely the aspect of *intelligence* from his biologic problem, by introducing *automatic* action as a substitute for instinct. But automatic action is meaningless if intended to explain away the ever-present power of a generating, regulating, unifying, equalizing and directing power, active in every creature. The word automatic merely attempts to describe a process or a movement, the cause of which, so far, is hidden from observation.

The principle inevitably back of every muscular action is presented in the fulcrum and involves a series of progressively interacting elements—mechanical, dynamical and metaphysical, viz.: the lever, the fulcrum and the presiding intelligence.

The lifting of a rock, the raising of an arm or the locomotion of an entity remain utterly incomprehensible without the intelligent coöperation of these agents of motion.

Every serious student of physics is ready to admit that the lever for its fulcrum requires a basis distinct and separate from the object acted upon. "Give me a fulcrum for my lever," said that first historical demonstrator of lever action, Archimedes, "and I shall move the world." To postulate the fulcrum, the lever and the operator as all in one, identified at once with the object acted upon, the seat of action and the motive of action, is as irrational as to concede to a man the power of lifting his own weight by pulling on his boot-straps And yet this is precisely Dr. Loeb's attitude in attempting to explain by purely physico-chemical, automatic action the heliotropic instinct in certain animals.

A Truth-Seeking Sage, According to Dr. Loeb, is Moved by the Same Impulse as a Heliotropic Worm Wriggling Toward Light.

But Dr. Loeb goes farther still in his search for a materialistic solution to the life-problem. Our wishes and hopes, genius and inspirations, altruism and self-sacrifice, spring from the same root as the automatic instinct of the heliotropic animals. "We eat, drink and reproduce," he affirms, "not because mankind has reached an agreement that this is desirable, but because, machine-like, we are compelled to do so."

"We are active," he continues, "because we are compelled to be so by processes in our central nervous system. We struggle for justice and truth, since we are instinctively—physico-chemically

—compelled to see our fellow-beings happy" and "that in the last analysis the mechanistic conception of life is the only conception of life that can lead to an understanding of ethics."

The inferences to be drawn from this theory will place a Plato, Carlyle, Emerson, Alfred Tennyson, Sir Oliver Lodge, or any other world-stirring seeker for truth in the same category, and compelled by the same mechanistic principles as a heliotropic worm wriggling towards light. Our volitions and aspirations, looked at from Dr. Loeb's point of view, are mere motor effects, arising from physico-chemical reaction products as the latter come to the surface in the course of an individual's daily course of living.

From the same source spring every expression of moral self-consciousness, with its depending convictions regarding ethical issues such as friendship, motherhood, philanthropy, self-denial, patriotism, etc., and the entire scope of humanizing virtues.

Consequently man is virtuous, not because of moral struggle and deliberate adoption of ethical ideals, but because "his existence is based on the play of blind forces and a mere matter of chance, determined to its ethical value by morphological characters of the male or female body."

Without Scientific Imagination Science Becomes Sterile.

It is evident that Dr. Loeb represents the purely technico-mechanical or physico-chemical aspect of a scientist, and, though his researches and experiments in biology have the greatest technical value, he is utterly lacking that scientific imagination, without which science becomes sterile and non-productive. Analysis, dissections, and disorganizations in any form, constitute only one side of scientific activity—the negative—which, if not followed or interlinked with a synthetic, creative, and constructive imagination, will reveal no unity of aim, and no intelligibleness of process. Even in its best and most successful work, science has no authority for what *is*, only for what *is not*. "The nightmare view of life," says William James, in one of his essays on vital problems, "has at all times had its great source in the contradiction between the negations of natural science and the craving of the heart to believe that behind nature and its phenomena is a spirit whose expression nature is."

Divorced from Synthesis and Unity, Analysis Spells Annihilation.

Furthermore, if the analytic process leaves out the synthetic, the subject, with regard to its individuality and typical distinguishment, is apt to get lost. The character of life is so inseparably associated with the type of life that the disorganization of the latter means vagueness or loss to the former. There is a story on record of a German scientist who undertook to dissect a soldier in order to bring into fuller evidence the latter's biologic and evolutional value. He commenced his biologic analysis by pulling the uniform off the subject, which resulted in the loss of its most distinguishing feature; with the loss of the uniform the mark of typical citizenship was also lost. Next followed the removal of the skin, which meant the removal of every mark indicating the man's national and racial characteristics. A muscle was then placed under the microscope, revealing the general fact that the subject consisted of carbon and formed a part of organic chemistry. Thus the theory of a mechanistic automatically governed universe, in losing sight of unity in the dissection of units, of wholeness in the study of the fragmentary, launches itself into a *reductio ad absurdum* while explaining itself into nothingness.

And yet, what is an entity but a center of conscious life, endowed with powers of instinctual selection, biological appropriation, and physiological application,

manifested in symmetry of form, harmony of process and progressiveness of movement?

Unity is the indispensable condition for the ascent of life. Specialized sensation would be unintelligible were it not for the presence of a permanent center of consciousness: a central office, where the stream of incoming cellular notations become unified, coördinated and specialized into corresponding and co-related faculties of sense perception. But such a unity or center of consciousness, capable of progressive reactions to sense-reports, is utterly incompatible with the conception of life as a mere automatic and mechanistic process.

Environment—the Means, Not the Cause of Evolution.

Now what in the name of reason compels the single cell to throw in his lot of life with the community of activities that constitute the biologic entity, and unite into integral, purposive coöperation with the myriads of other individual cells? What gives the keynote to the varied performances of vegetative existence—to construction or disintegration, to growth or decay, to life or death—but a center or unit of intelligence which promotes or arrests the cellular operatives that give rise to the phenomena of form, type and consciousness.

We freely agree with Dr. Loeb that environment is instrumental to evolution and furnishes the means of vital advance. But what gives to the entities their power to accept and to utilize the proffered opportunities? The table may be laden with life-sustaining viands, and yet, unless the guest has the wisdom to accept, and the power to assimilate the nourishment, he shall starve and succumb in the midst of plenty. The environment is a powerless factor in evolution if not accepted and utilized by the entity; and it is this conditioning alternative in evolutionary existence—to accept or refuse, to advance or retire—that lies back of the ascent or descent along the entire chain of universal life.

Furthermore, this reduction of evolution and consciousness to mere movements of will-less mechanics and automatic spasms—by virtue of which "we eat, drink and reproduce, not because that this is desirable, but because, machine-like, we are compelled to do so"—forces upon us the inexplicable situation of an entity—Dr. Loeb himself—standing as it were outside himself, as existence, while critically analyzing the processes of which his own individual evolution is an accidental output. It is as if a pendulum undertook to demonstrate to the clock the philosophy of its time-recording principle. The output, to qualify itself, must determine the *modus operandus* of its own generation, and scrutinize the conditions instrumental in its own composition.

Ignorance of a Thing Does Not Mean Its Non-Existence.

Back of the visible world lies the invisible, precipitating itself molecularly into form, type and intelligence. It takes birth as idea, unfolds as concept, and materializes as word, song or picture. A book has its conception in the author's mind, a painting in the artist's, a song in the composer's; and evolution, with all its infinitude of physical and metaphysical typification, has its concept and birth, its genesis and exodus, in the mind of the universe. *Ex nihilo, nihil est.* From nothing, comes nothing.

It is reported that Bob Ingersoll, while visiting Henry Ward Beecher, observed a beautiful stellar-globe in the latter's library. "Ah!" he exclaimed, "what a masterpiece of thought and beauty. Where can I purchase a thing like that? Who made it?" "Who made it," replied the famous divine, "made it? Why, what an absurd question from you. Nobody, of course; it made itself."

But—*sat sapientum*—he that knocketh receiveth. The fruits of the spirit grow on the tree of life, and to each one shall

be given the due reward of his labors. Our individual unfoldment proceeds in the direction of our motives, under the stimulus of our ideals. Ignorance or its cognomen, darkness, is not dispelled by wrestling with its phantoms, but by striking a light. Hence, so far from agreeing with Dr. Loeb that "as long as the life phenomenon has not yet found a physico-chemical explanation it remains inexplicable," we feel urged by every force of thought and logic to accept the opposite view for our mental and moral guidance. Until a life-phenomenon has found its explanation in the genesis and conception of an ever-willing, ever-sustaining, super-sensual and super-physical intelligence, the physico-chemical phenomena in existence remain unexplained and inexplicable.

"One impulse in the vernal wood
Has taught me more of man,
Of moral nature and of good,
Than all the sages can."
—*Wordsworth.*

Or, in the words of Henry James: "Imagine an absolutely material world, containing only physical and chemical facts, and existing from eternity without a God, without even an interested spectator: would there be any sense in saying of that world that one of its states is better than another? Or, if there were two such worlds possible, would there be any rhyme or reason in calling one good and the other bad—good or bad positively, and apart from the fact that one might relate itself better than the other to the philosopher's private interests? Would any designation of moral degrees and preferences be at all possible if the universe in its inner and outer life, as cause and effect, means and ends, power and motive, constituted only a series of chemical explosions, molecular tournaments and biologic hide-and-seek movements?"

* * *

A certain young maid of Berlin,
Sat down on the end of a pin,
But so well was she screened
By what intervened
That it didn't go very far in.

A CASE OF VOLUNTARY NYSTAGMUS.

In the leisure of aboardship passage out to India recently a fellow passenger showed me a curious eye-trick, of which he seemed not a little proud. He is a chemical expert, with the degree of Ph. D. of Heidelberg, and it naturally follows that he is very highly educated, and a good observer; he is an active man of good physique and of exceptional powers of endurance; his age is thirty; he has, according to his own statement, exceptionally keen distant and reading sight. I had no means of testing this by types, but he could pick up objects on the horizon quickly and well.

He has never had headaches or any other signs of eye-strain; he has been able to produce nystagmus voluntarily as long as he can remember; to do so he stares straight in front of him, and within a second or two, the phenomenon begins. It is a binocular, horizontal, oscillatory movement; the amplitude is large and the movements are too rapid to count. There has never been a movement in any direction other than the horizontal; the oscillations cease as soon as, or very soon after, the voluntary effort is relaxed.

When he wishes to produce the nystagmus, he is conscious of a sense of effort which he refers to the situation of the external recti muscles of both eyes. During the nystagmus, objects appear to be blurred in the sense that they are drawn out sideways; a feeling of tiredness, which is becoming more marked now, as he grows older, attends the production of the phenomenon.

On several occasions of recent years he has noticed that the nystagmus has commenced spontaneously; this has occurred when he has been over-tired; he has been able to control it, almost at once, on such occasions. On the other hand, it is easier for him to produce the nystagmus when he is fresh than when he is tired.—R. H. Elliot, M. D., in *Ophthalmoscopy.*

Why Babies Die.

By Charles E. Page, M. D., Boston, Mass.

Author of "How to Feed the Baby" (an all-'round nursery guide).

THE subject of the conservation of infant life is an ever-present one, and holds always an absorbing interest for both the physician and the economist. Hence, any thoughtful contribution to the question is always welcome, even though it raise presumptions and advance theories with which every one can not agree. We do not necessarily hold ourselves in agreement with everything that Dr. Page here sets forth. But Dr. Page is an earnest, thoughtful, original writer, and invariably has some real meat to offer for our mastication and digestion. There is a lot of common sense in what he says, with which if we would admit and modify our ultra-scientific minds, we would undoubtedly be better off, and so would our little patients.

One of our brave women workers in the field in the interest of the little ones recently stated that "there are about two million babies born in this country every year, and of these about one-fourth die under five years of age!" About fifty per cent of these deaths are under one year; so that we have to face the deplorable fact of the slaughter of about 250,000 new-born children every year. While we are groaning and mourning over the deplorable loss of life in the Titanic disaster it is well to reflect upon the fact that during every week in the year about three times as many deaths under one year occur as deaths at all ages on the sinking of the Titanic! Now, these precious baby lives are not sacrificed by any means as a rule from lack of parental or nurses' attendance; nor is it for want of cooking or Pasteurizing the milk of bottle-babes. For the most part these premature deaths result from lack of rational, natural treatment, such as the young of the lower animals receive the world over. If kittens and puppies were treated as are our new-born babies they would have as many illnesses, and as many of them, perhaps even more of them, would die as young, relatively, as do the little humans. Huxley, the eminent physiologist, has said—of course, speaking broadly—that "a man could move Newgate prison if he could breathe all over his body like a flea!" But the fact of it is that a naked, or scantily draped, man does breathe all over his body; the millions on millions of capillary blood-vessels are during every instant of time exhaling carbonic acid and inhaling oxygen just as do the blood-vessels of the "inner lungs." The human infant is as truly a naked animal by nature as is the offspring of the hairless dog. The furry coat of the kitten does not impede the breathing function of its skin; but when at birth the little body is swathed in many folds of flannel, as is the universal rule even in midsummer, the breathing function of the skin is hindered about as that of the lungs would be if the baby's head were enveloped in a flannel bag. It does not require the wisdom of a sage to understand what a tremendous handicap this is for every new-born baby.

Of course, every error in diet and general management has an influence on the health and death rate. Wrong and overfeeding, malposition of the body after birth, as placing the child on its back instead of on its belly, thus depriving the little four-legged creature of the natural exercise for the development of strength such as all other younglings enjoy; coddling, over-tending, encouraging the

sitting position, a position never assumed by any other animal at any age—all these mischievous influences act their part in snuffing out the lives of our babies. Right here I wish to call attention to the fact that the whole problem has been completely solved as to the cause of infant mortality and the means of prevention. One graduate trained nurse, Miss Anna L. P. Harrison, of Portland, Me., has attended at fifty confinements during fourteen years with never a death under one year. According to the infant mortality of Boston during 1910 (127 per 1,000), there would have been at least six deaths under one year out of Miss Harrison's fifty, besides numerous illnesses among the survivors. But all her babies remained healthy, sleeping all night long every night like kittens. Her practice has been to remain in the home for a couple of months for the purpose of educating the mothers in the matter of the nature and needs of their babies. Some of the babies were bottlers and were fed four times a day, between 7 a. m. and 10 p. m., never oftener; at birth they were put face down on firm hair mattress with no pillow, and the lightest of drapery enveloped the little bodies, to be sure, and in all respects this nurse carried out the plan indicated in the foregoing.

The writer has never met Miss Harrison, and never knew of her or her work until she sent the above report two years ago, explaining that fourteen years previously she attended at a birth and the master of the house handed her a copy of a book on babies, remarking that their first baby, then a lusty 2-year-old, was reared under the teachings of this book and that she must manage the present case accordingly. So much pleased was she with the results that she made the plan her rule. One thing of great significance she mentioned and that was that while she had difficulty in some cases to convert the mothers, her greatest trouble was with the doctors, some of whom insisted upon having the baby fed every two hours, even if it had to be wakened for the meal! "In every such case," she said, "I had to deceive the doctor in order to save my baby."

Miss Harrison's experience has been like that of other nurses under this system, and mothers from all over the country have written the author of their success in rearing a family of children under the guidance of "How to Feed the Baby" (and all the rest of it).

It is a lamentable fact that physicians in general seem to have little comprehension of the nature and needs of new-born children; otherwise the shocking sights we are continually noting on the street and about home would not obtain. On warm spring days when the temperature has been 75° in the shade and 90° in the sun, I have seen babies bolstered up on feather pillows and enveloped in clothing that would be excessive even in mid-winter, and this on Commonwealth Avenue as well as in the poorer districts. The aim seems to be with all classes, rich and poor, to see how much clothing they can pack on, so as to make sure that the baby doesn't "catch cold." The inevitable result of this unnatural treatment is oxygen starvation to an extent that must in every individual instance prove a tremendous handicap to the victim. "Oxygen is the mighty scavenger in the vital economy, the general purifier and cleaner. Everywhere among the crevices and interstices of the vital plexus it lies in wait, seizing upon all stray stuff—waste products of functions and unassimilable matters of all kinds, and converting these forthwith into harmless and eliminable compounds." And this true friend, always read and "as free as air," so vital at all times, is not only barred from the skin which, as already stated, is a true breathing organ, but in too many cases from the sick-room of old and young. In pneumonia, a disease from clothing, chiefly, attacking individuals whose

weak spot, so to say, is the lungs, this great principle is rarely appreciated, the lack of oxygen is sought to be atoned for by tanks of it artificially administered, a treatment to my mind of little if any use in healing. The reason why comparatively few women have pneumonia is their lighter and more porous clothing; it is the men in under-flannels, heavy ordinary dress and top coats, that are the principal victims of this disease. It will be known ultimately that pneumonia is a true filth-disease arising chiefly from lack of oxygen in the blood, oxygen, the "mighty scavenger" of internal filth. We can never "catch" this disease from any stray "germ," but we may any of us *accumulate* it, so to say, by the means above indicated.

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THE ADJUSTMENT OF EYE-GLASSES.

F. W. Davis, in the *Lancet-Clinic*, believes that, considering the importance of correctly adjusted glasses, it is surprising how little thought is given to the subject. The adjustment has practical bearing on simple as well as compound lenses, but usually the matter is dismissed after the first adjustment.

Textbooks on opthalmology usually ignore the matter, assuming that students need no instruction on the subject. In astigmatism, exactness of adjustment is absolutely necessary, as patients sometimes discard their glasses in a short while, thinking them useless or worse than useless, when the fault lies wholly in the position. The following case will illustrate the above statement.

Mr. S. F., forty years of age, complained of severe headaches and vertigo after using his eyes. Refraction under homatropine showed the following condition:

Right eye, + 1 spherical combined with + .50 cylinder axis 45°.

Left eye, + 1 spherical combined with + .75 cylinder axis 130°.

He was given the above correction, except that + .75 was substituted in each eye for the + 1 spherical, to allow for ciliary action. Two months later he reported that while he had relief at first, later the glasses hurt his eyes, though he had worn them constantly. Examination of the glasses in position showed, while the nosepiece was in proper position, the clamp screw or rivet of each glass was loose, allowing the lenses to rotate, the inner parts rising and the outer falling, giving an effect to the right eye of a cylinder at 60° and to the left eye of a cylinder at 105°.

Straightening the glasses and advising the patient to have them frequently adjusted prevented further difficulty.

With simple spherical lenses, any deviation from the perpendicular to the visual axis increases the strength of the sphere and adds the effect of a cylinder placed at right angles to the plane of rotation of the lens (Phillips).

The above statement applies only to distance glasses. For near vision they should incline somewhat downwards and forwards and be placed slightly inwards, to correspond to that frequent adjustment, is of much importance to the patient, the inclination of the head and the convergence of the eyes, while if the glasses are for both near and far vision they should be placed medially between the two positions. The effect will not be that of a perfect position, but the divergence will be so slight that it will cause no trouble.

The bad effect of improperly placed glasses is not as marked with the periscope and toric lenses as with the double concave or convex glasses.

Another effect of improperly centered lenses is the prismatic deviation, throwing the image away from the visual axis and putting more strain on the extra-ocular muscles. The more one considers the subject the more impressive is the fact that frequent adjustment is of much importance to the patient.

Parinaud's Conjunctivitis.

By JOHN K. ACHENBACH, B. S., M. D., St. Louis, Mo.

HERE is another of those comparatively rare diseases in which the general practitioner is, or should be, interested. As the author very pertinently points out, a good deal of its apparent rarity is due to the failure on the part of the physician to recognize it when it does occur, and it is to remedy this failure that he writes this brief, but lucid, description of the disease. No doubt the author would be glad, as we would, to receive communications from those physicians who have encountered, or think they have encountered, cases of Perinaud's disease, with such particulars of the course and treatment of the cases as may be at their command. We invite our readers to write us on the subject, for the benefit of their confreres and the public in general.

This is a disease with which the general practitioner is not commonly acquainted, and even where he knows that such a condition is to be met with in the category of diseases, its symptomatology is not clearly defined in his mind. This is, of course, primarily because of its comparative rarity, but undoubtedly it is also partly due to the unfortunate nomenclature, which gives no adequate idea of its true morbid nature. A much better name for the disease, and one descriptive of its pathology and syndrome, would be adeno-conjunctivitis, or conjunctivo-adenitis.

The disease seems to be more prevalent than formerly, and it is very desirable that it should be recognized, inasmuch as the cases are generally first seen, and often treated throúghout its entire course, by the general practitioner.

It is to be hoped that a more general recognition of the disease will lead to a greater number of cases being reported and that thus more accurate conclusions may be drawn as to its nature and treatment.

The characteristic feature of the disease is a conjunctivitis, accompanied, or followed shortly after its onset, by a unilateral enlargement of the parotid and neighboring lymphatic glands of the neck. For this reason it is often thought to be a case of mumps.

In a majority of the cases a history of contact with animals, particularly horses, may be obtained. On this account, some have advanced the hypothesis that it is similar to foot and mouth disease which is prevalent at times in different parts of the United States.

However, morbid-material taken from the lesions in the eye and glands of persons suffering with Parinaud's disease and injected into the nasal membranes of young pigs (who are very susceptible to foot and mouth disease) has failed to produce the disease in the latter.

Bacteriological investigation has failed to produce any specific microörganism as the causative agent.

The disease starts as a conjunctivitis, with a slight discharge. The lesions vary in the conjunctiva from slight ulceration at the fornices, to polypoid granulations. The ulcers are of a dirty gray color, and have the appearance of having been touched with silver nitrate solution. The cornea is never involved, and the uveal tract remains unaffected.

The peculiar feature of the disease is the involvement of the lymphatic glands. In about a third of the cases they suppurate.

The systemic manifestations vary from slight malaise to high temperature and septicemia. Involvement of the tonsil

has been reported, as well as a slight pharyngitis and rhinitis.

The disease runs a course of from two to five months. The conjunctivitis may clear up in two or three weeks, but the glandular involvement may continue for months.

Its diagnosis should be easy, for no other disease presents the same picture and combination of symptoms. Trachoma may simulate the condition seen in the eyelids, but the absence of ulcers and cell necrosis would exclude it.

The best treatment for the conjunctivitis is the use of mild collyria such as boric acid solution, 4%, and the cauterization of the ulcers with silver nitrate solution, 1%. In case the glands suppurate, incision and drainage is called for. Some recommend the use of Fowler's solution for its systemic effect.

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INFECTIOUS ETIOLOGY OF RICKETS.

Cooley, discussing this subject in the *Medical Review,* states that one chief objection urged against this theory is the non-contagious character of the infection. It is hard to see wherein this contention seriously invalidates its credibility. Most of us at one time or another become unsuspecting hosts to the tubercle or typhoid bacillus without suffering any inconvenience therefrom. The Klebs-Loeffler bacillus has been found time and again on pharynx and tonsil without inducing diphtheria; even the spirochaeta pallida may find lodgment on some mucous membrane with no resultant chancre and the ubiquitous gonococcus has been known to remain passive and quiescent on a virgin field. So with practically every infection. That rickets does not follow certain fixed laws relative to contagion exhibited by the infectious diseases with which we are acquainted is no bar to its classification if in that category with equal facility we could exclude the streptococci, staphylococci and Schuler's organism from the list of infections.

That rickets could not be classed as an infectious disease because of its non-febrile character was strenuously urged by Kassowitz, Fischl, and later by Stoltzner. If this objection is valid, why include whooping cough, syphilis and scrofulosis in that category? It might be urged that in each of the above-named diseases febrile disturbances do at times occur. The same is true of rickets; much more rare, but the fact remains that in grave cases a rise of temperature has been noted. Opponents have urged this to be due to complications of associated diseases, with equal truth and logic; the same argument can be used against them in the examples cited. In some forms of joint involvement caused by Schuler's organism, where it is uncomplicated we have an infection running a non-febrile course. It is not only conceivable, but entirely within the range of probability that an infectious agent can produce the pathological processes found in rickets without causing febrile disturbances. In syphilis of the newborn and infancy we sometimes find more grave and wide pathological changes than those exhibited by rickets, with no rise of temperature from the disease *per se.* But our opponents interdict the use of the analogy between rickets and syphilis and scrofulosis, especially relative to bone changes, because "at this particular age the bones are the regions of active blood circulation and growth." In other words, we are permitted to employ the above physiological activity in accounting for the ravages of syphilis and scrofula at this period of life, but must suppose it inoperative in the case of rickets. By no stretch of the imagination are we allowed to conceive of the organism yielding to attacks along these channels if the invading microbe be the supposed cause of rickets. It is all right, however, in the case of syphilis and scrofulosis to invoke this physiological activity. Further pursuit of this argument is not worth while.

The Treatment of Condylomata Acuminata (Warts).

By DAVID WATSON, M. B., C. M., Glasgow.

Surgeon, Glasgow Lock Hospital.

(In the *Lancet*.)

CONDYLOMATOUS growths are not always of themselves serious, nor, unless they are of any great size, even particularly inconvenient. They have a serious aspect, however, in the fact that they frequently furnish the focal point for the development of malignancy. Hence it is wise to treat every condyloma as the potential beginning of an epithelioma, and to deal with it accordingly. Especially does this apply to the condylomatous growths of the preputial and anal regions. In this article by Dr. Watson the reader will find a very helpful and practical contribution to the treatment of these troublesome excrescences, and we strongly recommend them to carry it out in every case, so as to avoid all possibility of future malignancy.

Warty growths are a not infrequent accompaniment of gonorrheal infection, especially in patients who have an insufficient appreciation of the advantages of personal cleanliness. The vegetations may vary in size from a pin point to a cauliflower mass. They adopt the physical characteristics of the tissue from which they spring, whether mucous membrane or skin, but they all have essentially the same histological structure. The sites most favored by these growths are, in the male, the inner surface of the prepuce, the coronal sulcus, the meatus urinarius, and the surface of the glans. A considerable growth within the sac of a tight prepuce may give rise to sloughing and sinus formation, or a strawberry mass may project from the preputial orifice. In women the areas most prone to be affected are the inner and outer surfaces of the labia, the base of the clitoris, the vaginal walls, the cervix, and also around the anal orifice. Pregnancy favors the formation of large masses, owing probably to the increased vascularity of the parts.

Condylomata acuminata occur more frequently in women than in men, and in the female they attain much greater dimensions. Large cauliflower masses may cover the vulva and perineum, while numbers of small warts occupy the adjacent skin and mucous surfaces. So long as they remain untreated they are kept moist by an offensive secretion containing the detritus of macerated epithelial and pus cells and numerous microorganisms. Histologically, they are composed of elongated branching papillæ, covered with an enormously thickened epithelium. The papillæ are supplied with capillary loops, surrounding which are frequent patches of small round-celled infiltration. Special nerve endings found in the epithelial layer are connected with a fine network of nerve fibres in the base of the papillæ. The main bulk of the hypertrophy is due to the rapid proliferation of the swollen cells of the Malpighian layer, which is therefore greatly increased in thickness. Between these epithelial cells numerous mononuclear and polynuclear wandering cells are found. The surface cells which form the thin, horny layer tend to undergo maceration and desquamation, and minute areas of necrosis allow of serous and sometimes hemorrhagic oozing.

The customary association of condylomata acuminata with gonorrhea naturally suggests that the formation of these

growths is induced by the irritation of the gonorrheal discharge. The gonococcus has not been demonstrated in sections, but other organisms such as streptococci, staphylococci, and more recently spirilla have, of course, been found. Whether these papillary hypertrophies are the product merely of a mechanical irritation, or whether they owe their existence to the action of some specific organism, acting on a suitably prepared soil, is a problem still awaiting solution.

Treatment—The treatment which conspicuously suggests itself for all condylomata acuminata is excision with suture of the wound under local anesthesia Ligature of each portion separately or destruction by the use of caustics and cauteries are only mentioned to be dismissed as barbarous both in use and effect.

But even excision has disadvantages which prevent it from being of universal application. When large masses, such as are not infrequently found in females, have to be dealt with, a general anesthetic is required, and from one to two hours may be employed in removing several separate cauliflower excrescences as well as numbers of smaller growths. The time is mostly occupied in controlling hemorrhage from the very numerous bleeding points. When the most thorough removal possible has been effected and the remaining skin and mucous surfaces examined, these are found to be seeded with minute papillary vegetations, which one is tempted to treat with the thermo-cautery while the patient is still under the anesthetic. The latter procedure is worse than useless, as it destroys only a fraction of the minute growths, healing is painful and slow, and the results of the cicatricial deformity may be deplorable, involving perhaps loss of the sexual function or control of the bladder. But even when the temptation to use any cauterizing procedure is resisted the result will be disappointing. Recurrence, not of large masses, but of numerous smaller vegetations, is certain; all of the wounds will not heal by primary union as the maintenance of a clean field is impossible, and one can not foresee what will be the ultimate results of the cicatricial contraction. If, then, there are other methods of treatment which have any prospect of success they demand careful consideration. Several procedures have been advocated; formaline applied to small areas at a time is effective, but slow and very painful, for which reason I have had to discard it; carbolic acid and chromic acid are useful in the case of small growths, and are most effective when used alternately, but both of these poisons must be used with caution; resorcin and starch in equal proportions make a useful paste, but it is difficult sufficiently to localize its action, and inflammatory irritation may be produced; salicylic acid 1 per cent in precipitated chalk is recommended by Taylor as a dusting powder; chloral hydrate solution (1 in 8) has been suggested as a paint; tincture of iodine is another application which has its advocates. In my experience, however, the treatment which has been found to be most simple, effective, and free from objection is the application of lactic acid.

The mode of employment will depend upon the condition present. In the male circumcision is performed when necessary, pedunculated warts may be removed with scissors, and pure lactic acid applied to the base after the bleeding has been controlled. Other growths are treated with a continuous 1 per cent wet dressing or the occasional application of a strong solution. In the female, when there are several large masses, each portion is isolated and kept surrounded by strips of lint wet with a ½ to 1 per cent solution. The base of these growths may in addition be touched at intervals of a few days with the pure acid. Smaller growths are painted with the undiluted acid or a strong solution, and

when there is a large field of minute growths the wet dressing is employed. The dressings are changed as frequently as the amount of discharge necessitates, and at each change the parts are thoroughly bathed with an antiseptic, in the case of females a sitz bath being used. The largest masses wither and drop off, small growths are inhibited, and cure results without the formation of any cicatrices and without pain. The only disadvantage I have encountered in the use of lactic acid is the occasional occurrence of a general erythema when the treatment is pushed too energetically. This erythema is of trifling significance and quickly subsides on the temporary withdrawal of the acid and the substitution of a zinc and calomel dusting powder or ointment. On this account, however, it may be necessary when large areas are involved to intermit the treatment for two days in each week, and to protect the surrounding healthy tissues with vaseline in order to discourage excessive absorption of the acid. As soon as the seats of gonorrheal infection—urethra, cervix, rectum, etc.—can be reached, appropriate treatment is initiated, and this, combined with strict cleanliness, has an important influence in preventing the appearance of fresh growths.

The histories of a few cases kindly furnished me by Sister Frisby, of the Glasgow Lock Hospital, will illustrate the method and its results.

Case 1—The patient, aged thirteen, was admitted on September 1, 1910, suffering from gonorrhea and medium-sized warty growths in the anal region. The warts were treated by cyllin sitz baths three times daily and application of pure lactic acid once daily. In four days the warts began to improve, and they had completely disappeared in twelve days. Patient was dismissed on September 16th.

Case 2—The patient, aged twenty-one, five months pregnant, was admitted on August 22, 1910, with gonorrhea and numerous warty vegetations on the skin and mucous surfaces of the labia majora. Continuous wet dressing of 1 per cent lactic acid was employed. Improvement was manifest on August 27th, and completed on September 8th. Patient was dismissed on September 10th.

Case 3—The patient, aged nineteen, was admitted on September 5, 1910, suffering from gonorrhea and condylomata acuminata. Large masses covered the vulva and perineum and extended beyond the anus. The whole growth was as large as a medium-sized cauliflower. The patient at first had to be isolated on account of the very offensive odor. She had been previously treated for a short time in another hospital. The growth had prepared and grown with great rapidity three months before admission. After being cleaned up with a ½ per cent lactic acid solution the masses were separately surrounded with strips of lint soaked in 1 to 100 lactic acid. In two days portions began to drop off and in seven weeks all traces had disappeared without the formation of any cicatrices whatever.

These cases sufficiently indicate the lines of treatment and the results to be expected in most instances, but certain varieties, especially where complicated with syphilis, are more resistant. The only claim I make for this treatment is that it is the most generally satisfactory of the many systems with which I have experimented.

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MYOPIA OF STUDENTS IN CALIFORNIA.

Investigations made at the University of California show that the number of cases of myopia is exceptionally low. As the students come mainly from public schools of the State, the chances would seem to be in favor of a large portion of myopes. As this has not been found to be true, it must be due, the experts think, to the fact that in California the climate permits an abundance of fresh air in the schools because of the open windows during practically the entire school year.

Femoral Hernia Following Operation for Radical Cure of Inguinal Hernia.

By Dr. J. J. Link.

(Read before the St. Louis Academy of Science.)

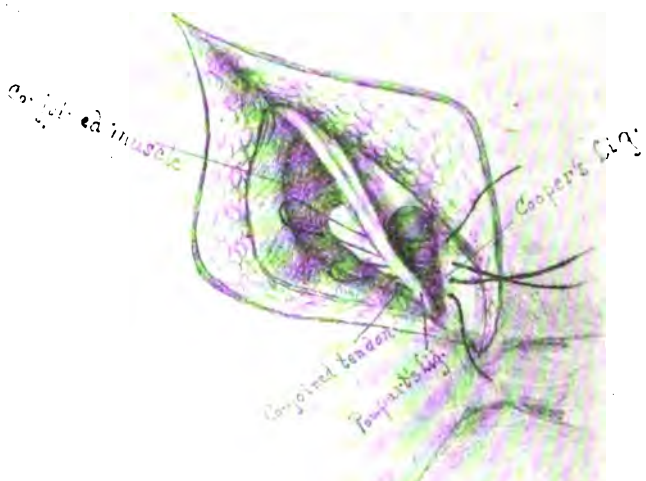
THERE are individuals in whom we find the Poupart's ligament rather scanty and less tense than normal, consequently any operation for the cure of inguinal hernia which requires the attachment of the conjoined tendon, or of the internal oblique and transversalis muscle would tend to a bowing of Poupart's ligament upward, forward and outward, with the result of increasing the size of the femoral opening and predisposing the individual to a femoral hernia.

My attention was attracted to this fact for the first time about fifteen years ago. A man about fifty years of age consulted me about a femoral hernia. He had been cured of an inguinal hernia on the same side by the injection method.

He was rather a lean individual, with a flaccid abdominal wall. The indications undoubtedly verified the diagnosis of his former inguinal hernia.

Case 2—A young lady of about twenty years of age was operated by me for inguinal hernia in which the conjoined muscle was attached to Poupart's ligament. About six months later I was again consulted by her and found that she had a femoral hernia on the same side for which I operated her.

Case 3—A male about forty years of age, a tall individual, rather inclined to loose, relaxed abdominal muscles, was operated by me for a complete inguinal hernia. About a year later he consulted me again, and I found in him a secondary femoral hernia on the same side of his inguinal hernia, and I also operated on him for the femoral hernia.



In the two latter cases I stitched the conjoined muscle to Cooper's ligament with perfectly satisfactory results. Since then I have operated in three cases of scrotal hernia in which I found this lax

condition in the tenseness of Poupart's ligament, and instead of stitching the conjoined tendon to Poupart's, I dissected down into the femoral region so as to expose the pectineal fascia and the femoral ring and stitched the conjoined muscle to Cooper's ligament with the object to avoid a secondary femoral hernia.

I would recommend this procedure in every case in which there is a lax muscular condition and a deficiency in the tenseness of Poupart's ligament in order to avoid secondary involvement.

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EARLY DIAGNOSIS OF POLIOMYELITIS.

R. Foster Kennedy, in a paper read before the Medical Society of the State of New York, stated that this disease was a primary general infection with local meningeal symptoms due to vascular changes and general symptoms produced by the specific virus. It was often difficult to diagnose early. As an example he cited the case of a boy who was to go on a sea trip who began to complain of headache, and while on the companionway of the steamer fell, and when he was picked up a paralysis from the neck down was noted. He developed incontinence of urine and hyperesthesia, but finally made a practically complete recovery. The speaker said the onset of this disease was usually sudden, with febrile manifestations, the temperature ranging between 101° and 102°. This might be accompanied by headache and vomiting. The pulse as a rule was not accelerated. The symptoms might not be severe enough to cause the patient to take to bed for the first two or three days. Coma and stupor might be indicative of cerebral involvement, although that diagnosis could only be made later, when the cerebral symptoms became marked. Hyperesthesia, pain in the neck and legs, Kernig's sign, and rigidity of the neck were symptoms also present.

Influenza was said to differ from this disease in that catarrhal symptoms were present, the specific organism could be obtained from the discharges, and it occurred in a different time of the year, namely, during the spring and winter. Summer diarrhea differed in the occurrence of diarrhea, high fever and sweating. In rheumatic fever the typical swellings were found. In tuberculous meningitis there always was a long prodromal course. The various meningitides, as tuberculous and cerebrospinal could be distinguished by lumbar puncture. In tuberculous meningitis the fluid obtained appeared clear or slightly turbid, with a fibrinous flocculus on standing for a short time. The globulin reaction was positive and Fehling's solution was not reduced.

To be noted was an increase in lymphocytes, and in 80% to 85% the presence of the tubercle bacillus was to be shown by testing the clot and appropriate staining on a slide. In epidemic spinal meningitis the fluid was turbid, and only in the early stages could a reduction of Fehling's be obtained. A polynucleosis of from 94% to 65% and the presence of Gram negative extra- and intracellular diplococci could be demonstrated. In poliomyelitis the fluid was clear or slightly opalescent, with a less marked clot formation. Early the globulin content was slightly raised, to disappear in three weeks. Fehling's solution was reduced. During the first one or two days the cytology was mainly polynuclear cells, and then changed to a marked lymphocytosis. No organism could be demonstrated by ordinary bacteriological means. He remarked that by serological tests the presence of abortive cases had been proven. The reflexes should be taken many times during the day, as a change, especially if unilateral, might be indicative of this disease. Differentiation from post-diphtheritic polyneuritis was also mentioned.

CURRENT MEDICAL LITERATURE.

UNDERWEIGHT.

THE *Medical Record* insurance editor remarks that underweight seems to exert no harmful influence as long as it does not exceed 20% below the standard. The mortality rises, however, to a point where it is of consequence when the weight of applicants as a class go below the 20% mark.

The bad effects of underweight are especially noted in the younger ages. While moderate overweight is a favorable condition in this stage of life, underweight on the contrary is unfavorable and in some cases indicates a tendency to or the commencing of disease. This is particularly true of young lightweight dyspeptics, this class having a decidedly excessive mortality rate, and many of these applicants developing pulmonary disorders. A mortality of about 110% may be expected among young underweights when the weight runs from 20% to 25% below the standard; in other words, when they are moderate underweights. The rate increases as the weight falls still lower.

As age advances, lower mortality rates are encountered, so that during the ages of from thirty to forty, the rate may be estimated at about 100%, which is still rather high. After the age of forty the mortality becomes fairly satisfactory as it ranges from about 90% to 95%. General experience teaches that moderate underweight in those over fifty years of age is by no means a disturbing element, for these are the applicants who may be expected to stand acute illnesses far better than the stout ones, and who have more chances of living to become octogenarians, finally "drying up and blowing away."

Underweight as an Advantage—By consulting the table of the "Causes of Death" in a previous section on "Obesity an Abnormal Condition," it is seen that underweights have the advantage in a varying degree in typhoid malaria, diabetes, diseases of the nervous system, diseases of the circulatory system, diseases of the liver and digestive system and diseases of the kidneys and genito-urinary system. It is also seen that in none of the cases considered did any person die of old age among the overweights, whereas a fairly good percentage is noted for the underweights.

Sir Dyce Duckworth during a discussion of relative weights (Proceedings of The Life Assurance Medical Officers' Association, London, 1901), recounted a story told him by Sir William Jenner: the latter had been called down to the country to see a patient suffering from pneumonia. The family practitioner met him at the station to say, "I am afraid this is a bad case and do not expect the man to pull through. He is a lean, poor, miserable, thin man and spitting up large quantities of blood." Jenner answered, "You have told me two good things that make me think favorably of the case, because the leaner the patient, and the more blood he spits up in pneumonia, the more likely he is to pull through." The patient recovered.

Underweight as a Disadvantage—In the same table the excessive rate of deaths due to disease of the respiratory system is evident. For instance, pneumonia is seen to be nearly twice as fatal among underweights as among overweights. This is apparently a glaring inconsistency to much that has been said, as it has been asserted that the prognosis is more serious in the overweights. The seeming contradiction may be explained by the assumption that overweights have a certain immunity from pneumonia but do badly when attacked, while under-

weights are more than usually susceptible to the pneumococcus.

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AN ANTI-SERUM FOR CANCER.

In a report on this subject made by Berkeley and Beebe, in the *Medical Record,* the authors give these findings:

1. By successive injections of a specific human cancer extract (the cancer being partially removed by operation) into an alien mammalian species it appears that a serum may be developed which, when injected intramuscularly, or better, intravenously, in increasing doses into the original host, is followed by rapid regression and disappearance of the remains of the tumor. This can not be done with a normal alien serum. It is hard to explain the phenomenon except as a cytolysis of the tumor cells.

2. There is a strictly quantitative relation between the amount of serum used and the amount of tumor which may be made to disappear.

3. No ill effects have been so far observed from the injections of the serum (16 cases), except local swelling and the anaphylactic fever and vasomotor disturbances noted after giving an equal amount of normal foreign serum.

4. The relation of one antiserum ("stock serum") to histologically different cancers is variable and full of surprises. It will take years of labor to determine all the curious chemical affinities that may be involved.

5. Present clinical results are briefly as follows: Sixteen cases of malignant disease in all stages of advancement have been treated in the last nine months. A microscopical diagnosis was made in all but three cases. Fifteen were cancer and one was sarcoma. Nine received stock serum, one received autogenous serum after a secondary operation, six received autogenous serum after a primary operation. Of the nine patients receiving stock serum two were moribund when first seen, and died quite uninfluenced by the injections; another, having cancer of the esophagus, was remarkably benefited for several weeks; one, with an immense cancer of the tonsil, was somewhat benefited temporarily. One very extensive primary cancer of the bladder has not been recently heard from, but was probably not benefited. Of two immense cancers of the stomach, one was entirely unaffected, one slightly improved. One patient (breast case), after two months of injections, is nearly well and in excellent general condition. Another case (uterine cancer recurrent in the bladder) recovered promptly and has remained entirely well for four months. One far advanced breast case receiving a small amount of autogenous serum after a secondary operation, was greatly improved, but subsequently died of intercurrent acute disease. Of the patients receiving autogenous serum after a primary operation one is still under treatment, greatly improved; the others have had no recurrence within a period ranging from three to six months.

The present impression of the writers is that autogenous serum is much more effective than stock serum. It is believed that the great field of usefulness of the new serum will be to prevent the recurrence of malignant tumors removable in the early stages by operation.

There is no indication from present experience that large inoperable cancers and sarcomas will be amenable to the serum treatment. Treatment, to be effective, must be early if there is to be any reasonable quantitative relation between tumor and antibody. This report is hopeful and it is apparent that some of the many investigators in the cancer field will eventually discover a specific.

Great hopes are entertained that Ehrlich and Wassermann, working, as they are, in conjunction, will have a definite report of real progress in discovering a specific for human cancer, as they have for mouse cancer, before the end of 1912.

ALCOHOL INJECTION IN TRIGEMINAL NEURALGIA.

Harris, in the *Lancet,* says that in the last three and one-half years he has seen 90 cases of intractible trigeminal neuralgia, 86 of whom he has treated with alcohol injections. In only 3 cases was no relief obtained owing to the nerve not being found. In 3 others slight definite improvement resulted, and in the remaining 80 cases complete relief was obtained for intervals varying from as little as two months and four months in 2 cases, to two and one-half years and more. For the majority, twelve months of complete relief from pain may be looked for as a minimum, if the nerve is definitely hit and anesthesia produced; while two or three years and more may be expected when the depth of anesthesia indicates that the nerve has been properly destroyed. Strong alcohol injected into any nerve trunk destroys the nerve fibers almost immediately, and total loss of function will occur until regeneration takes place. The extirpation of the ganglion gives a permanent cure, but its severity deters a large number of sufferers from seeking relief by this means.

Harris has tried to improve on the technique of the deep injection of alcohol by carrying alcohol through the foramen ovale into the Gasserian ganglion itself, in order that by destroying the nerve cells in the ganglion regeneration of nerve fibers along degenerated trunks shall be prevented and a permanent cure be thus obtained. During the last fifteen months he has injected the ganglion through the foramen ovale with 90% alcohol in 7 cases. The first was done thirteen months ago, and he still remains perfectly well, with no pain of any kind. Harris' technique for injecting the Gasserian ganglion varies only in detail from that of injecting the inferior maxillary nerve at the foramen ovale; instead of inserting the needle close below the lower border of the zygoma, he chooses a point either on or slightly below the line joining the incisure notch to the ala nasi. This line in the average skull, when the teeth are in position, corresponds to the lower border of the sigmoid notch of the lower jaw. To reach the foramen ovale, therefore, the needle must be directed slightly more upward, making it thus easier to pass the point through the foramen. As soon as the nerve is reached at the foramen, he injects it with 90% alcohol, using about 1.5 c.c., but if no general anesthesia is being given, he precedes the injection of alcohol by injecting 6 or 7 minims of 2% eucaine solution into the nerve, thus rendering the subsequent injection of the alcohol comparatively painless.

If there results, immediately, deep anesthesia of the lower lip and chin from injecting the nerve itself, he then feels for the lip of the foramen ovale with the point of the needle, if this has not already been felt. Sometimes the needle slips easily through the foramen, sometimes it has to be worked through, but no degree of force should be used. Sometimes after pushing the needle through the foramen ovale the point of the needle may leave the nerve tissue and enter the cave of Meckel, and cerebrospinal fluid may drip from the needle. If the injection of alcohol be then commenced no resistance will be felt to the push of the piston, and instantly the patient will complain of severe headache at the base of the skull and back of the head. Should this occur the needle must be partially withdrawn, and then worked through at the posterior edge of the foramen, so as to keep the point within the substance of the ganglion. Injection for the second division at the foramen rotundum is usually more difficult than for the third division at the foramen ovale, and in a certain proportion of cases it is impossible. There is also more liklihood of hematoma from wounding the internal maxillary vessels. These points are additional reasons for preferring the injec-

tion of the Gasserian ganglion through the foramen ovale.

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INTERNAL REMEDIES IN CHILDREN.

Pediatrics for February calls attention, editorially, to the value of certain internal remedies in pediatric practice. The editor dares to uphold the proper use of alcoholic stimulation in spite of the often bitter and hysterical objections that are raised against it. He insists that amongst internal remedies alcoholic stimulants take a high place. Children reduced by severe illness respond well to the action of alcohol, and a few timely doses of this medicine have often, in doubtful cases, turned the scale in favor of recovery. However, since a stimulant is not a tonic, the remedy should not be continued too long, but should be withdrawn or greatly reduced in quantity when the desired object has been obtained.

Tonics like quinine, iron, the mineral acids and vegetable bitters, while of great value in children's diseases, must not be given indiscriminately, simply because the patients look weak and pale. Their condition may depend upon a chronic form of dyspepsia, and a proper selection of food, alkalies to diminish the secretion of mucus and to neutralize the acidity will often produce a marked improvement in cases where tonics have been given without results.

Cod-liver oil is inappropriate as long as any digestive derangement remains uncorrected, but when this is accomplished, the oil in suitable doses is of immense value. The proper dosage of cod-liver oil is usually far smaller than commonly conceived. Especially in small children the power of assimilating fats is relatively slight and a few drops are often of service when teaspoon doses would do harm. Where the oil can not be digested it may be administered in form of inunctions.

In the administration of drugs the individual susceptibility or tolerance must not be lost sight of. As a rule children will bear relatively large doses of atropine and small doses of opiates; they bear well quinine, digitalis, arsenic, ergot, while the mercurials, which rarely salivate children, still may have a powerful effect in deteriorating the quality of the blood.

The editorial in question, of which we have given here an outline, contains much that is of value. The treatment of children and of infants presents problems the solution of which can not be inferred, but only suggested or indicated from our experience in adults, and even more than in these is it of importance in children's practice to individualize strictly and to treat the patient, not the disease.

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ANGIOMA OF THE MAMMARY GLAND.

Carl, in *Deutsche Zeitschrift fur Chirurgie,* says that in a 22-year-old girl there was observed a mammary tumor which had been gradually increasing in size since childhood. For the past three years it was painful. No injury had been received so far as the patient knew. The tumor was located in the upper outer portion and in the depths of the left mammary gland. Upon palpation it seemed to be either a fibro-adenoma or a cyst. The patient desired operation because of the pain which the condition produced. During the operation it was found that the tumor, which was about the size of a walnut, could not be shelled out. After it was removed it was found to be soft and to slight extent fluctuating. On being cut into it was found to contain a chocolate-brown fluid. Microscopic investigation showed that the tumor was encapsulated and that the interior was composed largely of blood-vessels, with some connective tissue around the larger sized vessels. These findings indicated that the tumor was a congenital hemangioma into which hemorrhage had occurred apparently because of some external influence. Although the operation was done three years ago, there has been no recurrence.

VAGINAL DOUCHES.

Frederick Mohn, in the *Medical Council,* thus enumerates the uses and effects of vaginal douche therapy:

Effects of Vaginal Douches.

1. Hygienic, pertaining to the daily toilet of the vagina by tepid, mild, antiseptic douches; for instance, a few crystals of potass. permang. to one quart of water. For quick cleansing douche, insert tube deeply, allow fluid to escape immediately into douche-pan or vessel. Inject a syringe or two once daily, particularly in hot weather or when traveling.

2. Mechanical—For removal of catarrhal secretions with the vagina. Insert the tube deep enough to cause the fluid to come in direct contact with the mouth of the uterus and surrounding parts. Eject fluid from syringe and cleanse same with water. If parts are inflamed, insert pipe only one or two inches into vagina.

3. Thermal douches may be various temperatures. Cool (below 70° F.) temperatures are to be used in acute inflammation, tepid in sub-acute and warm or hot (105° to 110° F.) in chronic involvements of the vagina and its adnexa. Press the bulb carefully, causing the vagina to partly fill. On the second injection the heated fluid has caused the parts to relax and permit a larger injection. The douche is best taken in a lying position, especially if the effect of the temperature is desired.

4. Chemical douches may contain any of the various, antiseptic, astringent, soothing or stimulating solutions. Douches are especially used in the acute stages of vaginal inflammation, partly to cleanse, partly to aid in correction of vaginal or uterine iritations.

Vaginal Douches May Be Used.

1. By the gynecologist, the surgeon and the general practitioner:

In all the acute forms of vaginitis, whether specific or nonspecific, cool douches twice daily containing a mild astringent, as one drachm of acetate of aluminum to two quarts of water, or pyroligneous acid three drachms to the quart. Slow injection with partial insertion, patient in recumbent position. Douches repeated two or three times daily plus local treatment.

In chronic vaginitis with leucorrhea, tepid to hot injections of boracic acid, two drachms to the quart, forms a mild, cleansing douche, while acetate of aluminum, one or two drachms to the quart, is soothing and healing. Syringe to be refilled three or four times twice daily.

Dysmenorrhea in its various forms may be relieved by three or four very hot vaginal douches two or three times daily in addition to other constitutional treatment.

In acute cervicitis, metritis, endometritis, parametritis, pelvic cellulitis, salpingitis in its varous forms, use cool or tepid vaginal douches of acetate of aluminum, two drachms to the quart, once or twice daily, besides constitutional treatment. In chronic inflammations of the uterus and adnexa, tepid douches gradually increased to hot will allay inflammation and possibly assist in resorption of infitrates, exudates and hematoceles by the mechanical, thermal and chemical effects of the vaginal douches. In acute hematocele, hot, deep, slow douches will tend to arrest hemorrhage.

In prolapsus vaginæ et uteri, use tepid solutions of potass. permang., a few crystals to the quart, or pyroligneous acid solution, two tablespoonfuls to the quart.

Carcinoma uteri, with ill-smelling discharges, should be treated with cool solutions of potass. permang., a few crystals to the quart, three times daily.

Tepid or warm disinfectant douches should be used as preparation for any surgical or non-surgical interference or manipulation of the vagina and its adnexa.

Sciatica may sometimes be relieved by hot vaginal douches.

2. By the obstetrician:

Forceps deliveries. The vagina should be douched with a 2% solution of carbolic acid.

Pruritus vulvæ. Great care should be taken to cleanse vagina with solution of borax, a half pint slowly injected into vagina twice daily.

Puerperal fever with pelvic exudates. The hot vaginal douches aid in diminishing the local pains and, perhaps, in causing a disappearance of the tumor.

Puerperal hemorrhage. Hot antiseptic or sterilized vaginal douches.

Retained placenta. Warm antiseptic solutions.

In protracted first stage of labor, use hot sterilized vaginal douches, as they "promote organic changes in the cervix, stimulate the contractions and mechanically distend the vagina."

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LEUCOCYTE COUNT DURING SLEEP.

Fulpins, in the *British Medical Journal*, draws attention to some interesting facts in connection with the leucocyte count during sleep. Hitherto the influences of food, fasting, exercise, and certain medicaments have been recognized as affecting the leucocyte count. The author points out that sleep must be added as another physiological factor, which produces a marked variation of the leucocyte equilibrium. Impressed by the discordant reading of the blood in tuberculous cases, very comparable clinically, the author has come to the conclusion that the time at which the blood count is made is responsible for this. If the blood of an individual asleep or just awake is examined, it is found that the lymphocytes, which are normally 25%, rise to 40% or more, while the polynuclears diminish in proportion as do the eosinophiles and basophiles. Two or three hours later, when the patient has begun to move about, the normal ratio is established. The actual total of leucocytes per c.mm. undergoes only slight variation, as do the red cells and percentage of hemoglobin. The author quotes, among other cases, that of a tuberculous patient whose blood, examined during sleep, gave a total of 18,500 leucocytes per c.mm. Of these, 74% were polymorphonuclears and 16% were lymphocytes. The result of an examination later in the day showed a total of 17,500, of which 80% were polymorphs and 7% lymphocytes. Indeed, a tuberculous person examined during the day may present a lymphopenia, whereas during sleep and rest there may be a normal average of lymphocytes. The author suggests that the slowing of the circulation during sleep may suffice to explain the condition as an unequal distribution of the elements of the blood—the heavier elements accumulating in the heart and great vessels, while the lighter elements circulate in the peripheral vessels. He is not, however, satisfied with such an explanation. The results obtained, however, go to show that, contrary to the usual opinion, the leucocyte equilibrium is not constant physiologically apart from the effect of food, exercise and other influences.

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VIVISECTION.

Whatever valid arguments are made by the anti-vivisectionists, says the *Medical Council*, may be met by the fact that there has been a general agreement among the directors of the large laboratories, and the following rules have been posted in practically all of them:

"1. Vagrant dogs and cats brought to this laboratory and purchased here shall be held at least as long as at the city pound, and shall be returned to their owners if claimed and identified.

"2. Animals in the laboratory shall receive every consideration for bodily comfort; they shall be kindly treated, properly fed and their surroundings kept in the best possible sanitary condition.

"3. No operations on animals shall be made except with the sanction of the

director of the laboratory, who holds himself responsible for the importance of the problems studied and for the propriety of the procedures used in the solution of these problems.

"4. In any operation likely to cause greater discomfort than that attending anesthetization, the animal shall first be rendered incapable of perceiving pain and shall be maintained in that condition until the operation is ended.

"Exceptions to this rule will be made by the director alone, and then only when anesthesia would defeat the object of the experiment. In such cases an anesthetic shall be used so far as possible and may be discontinued only so long as is absolutely essential for the necessary observation.

"5. At the conclusion of the experiment the animal shall be killed painlessly."

If these rules were made legally incumbent upon all laboratories and all vivisectors, the propagandists would be robbed of practically all of their thunder.

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THE SAFETY OF CHLOROFORM IN LABOR.

The *Therapeutic Gazette* calls attention to the well-known fact that the highest mortality from the administration of chloroform as an anesthetic has occurred when this drug was employed by dentists, not necessarily because this class of practitioners is less skillful in its use, but probably because the drug was commonly administered when the patient was in the sitting rather than in the prone position, and therefore the fall of blood pressure, which is so characteristic of the early influence of chloroform, exercised a greater effect upon vital centers. Conversely, it has been universally recognized that the mortality rate from the use of chloroform during parturition is extremely low. It has been thought by some that this was due to the fact that less chloroform was used, and by others that the immunity of the parturient woman depended upon the fact that hypertrophy of the heart, which is supposed to develolp during pregnancy, acted as a protective; but these two reasons seem hardly adequate, since the chloroform is often given to the parturient female by unskilled hands while the physician is busy with the delivery. Further it is a question whether there is any actual hypertrophy of the heart in pregnancy which would enable it to resist chloroform. Finally, it has been pretty well proved that, except in cases of myocardial disease, chloroform does not produce death by its direct action upon the heart. It would seem that a more reasonable explanation for the immunity of this class of patients to chloroform depends upon the fact that the patient does not take it constantly, and furthermore that each succeeding pain acts as a distinct stimulant to the vasomotor center which is ordinarily much depressed by this drug, it being well known to physiologists that pain produces a marked rise in blood pressure.

That death does occasionally ensue from the use of chloroform in labor must, of course, be recognized, and a case of this character has been reported in the *Atlanta Journal-Record of Medicine* for November, 1911, by Hodgson, who records the case of a woman of twenty-four, a primipara, who was delivered by the aid of forceps. She had been in hard labor for some time. After what was apparently a moderate amount of chloroform had been used the patient stopped breathing, just as the head passed over the perineum, and all efforts at resuscitation failed. There is no record of an autopsy to reveal the condition of the heart, but it is said that the patient had the appearance of a normal, healthy woman, and that at no time was she very deeply under the influence of the anesthetic.

MAGNESIUM SALICYLATE.

This salt is prepared by interaction of salicylic acid and magnesium carbonate. When dry it forms long, colorless, hygroscopic crystals, readily soluble in water and alcohol, and with a bitter taste.

Magnesium salicyate was recommended by Huchard in abdominal typhus as a valuable agent for freeing the intestinal canal from infectious substances. Even in cases where there was much diarrhea its use is not held to be contraindicated, as slight laxative effects only are produced when large doses are given.

When prepared from the true natural salicylic acid, no unpleasant effects are noted, and it has proved a most useful agent in many cases of summer diarrhea.

The dose varies considerably; from a few grains as a mild intestinal antiseptic up to fifteen grains three or four times a day in cases requiring more energetic treatment.

Attention is called to this product by Norbert Ortner of the University of Berlin, who recommends it as an intestinal antiseptic in doses of from forty to ninety-five grains per day. In these doses it is somewhat laxative, but does not disturb the stomach; in smaller doses it is also antiseptic and useful in diarrhea, dysentery, cholera, etc. Drs. Waugh and Reque, of Brooklyn, use the following prescription:

Magnesium salicylate.....15 grains.
Magnesia cream..... 2 drachms.
Aqua..... 2 drachms.

to be taken in one dose three times a day after meals.

Professor Boas in a paper last year in the *Berliner Klinische Wochenschrift,* confirms the previous reports stating that he had found magnesium salicylate the best anti-fermentative drug, as it has the peculiar value of not causing constipation. He employs it in doses as high as fifteen to thirty grains—three times per day, and where constipation and catarrhal inflammation already exists along with the flatulence—he recommends in addition small repeated doses of castor oil.

HYPODERMIC INJECTIONS FOR THE SECONDARY ANEMIA OF CHRONIC PULMONARY TUBERCULOSIS.

Barlow and Cunningham, in the *Journal of the American Medical Association,* state from their experience that the following conclusions seem justifiable:

1. The subcutaneous or intramuscular injection of sterile solutions of arsenic or iron, or of the two in organic combination, is entirely practicable in the treatment of the tuberculous in sanatoriums.

2. The effects of such medication are seen chiefly in the changes in the blood and in the body weight.

3. The preparations of iron seem to affect the hemoglobin content more profoundly than they do the number of red blood-cells.

4. The preparations of sodium cacodylate and of atoxyl seem to affect the number of red cells more markedly than the hemoglobin.

5. These solutions are in no sense specifics against the tubercle bacillus, but seem to exert a general tonic or alterative action within the organism.

6. The use of these preparations is entirely safe and not attended with danger to the patient, even when continued over a period of many months.

7. Relatively larger doses are borne when given thus than are tolerated when given by the mouth.

8. The dosage is capable of exact control, and the amount of the drug absorbed is known definitely.

9. The body weight is more rapidly and more certainly raised when these preparations are employed than when the unassisted hygienic-dietetic form of treatment is maintained.

10. There is no demonstrable increased liability to pulmonary hemorrhage accompanying the use of these preparations in pulmonary tuberculosis, even with advanced cases and in the presence of progressive destruction of the lung.

THE DOCTOR HIMSELF.

THE RECREATIONS OF THE MEDICAL MAN.

THE Lancet, writing editorially on this topic, tells how an old university tutor who had trained relay upon relay of reading men to high position in the honors lists used, before they had left his hands, to give them advice, drawn from experience of the after career of his pupils, and his counsel was to this effect: Form and cultivate some recreation subsidiary to your professional work—something that will give to the mind change of scene, imbuing it with a sense of resource outside its daily routine, so as to relieve it of the strain born of "sameness." Let the recreation be intellectual, moreover, of such a kind that can be enjoyed at home, without going out of doors to find it. And the kindly veteran would follow up his advice by citing examples where it had been followed—by none, he would add, with more salutary results than by the medical practitioner or consultant. The annals of the profession indeed abound with confirmation of his counsel and experience, and we are reminded by a frequent and valued correspondent that a most recent case in point was that of the eminent physician for whom the sister island is now mourning, Sir Francis Cruise. "Fascinated from his boyhood," writes our correspondent, "with the book which has run through more editions, in more languages, than all others except the Bible—'The Imitation of Christ,' otherwise called 'The Ecclesiastical Music'—Cruise would turn from his forenoon walk through the clinical wards or from the afternoon cares of the consulting room to the master work of A. Kempis, finding in it what, strange to think, Auguste Comte, the Positivist, found in it, 'one of the principal daily sources of nourishment and consolation for the soul.' It was an impressive sight to see the busy physician in his library at the close of the day, with the autograph edition (photographed in facsimile) of 1441 before him, collating its text with that of subsequent recensions, and ready on the slightest hint to reopen the perennial problem as to who was its author, which he would solve then and there by a brief but cogent assertion of the claims of Thomas A. Kempis, as against those of the French Gerson, Chancellor of the University of Paris, or of the Abbé Gersen, of Vercelli in Piedmont. Even on his holiday, especially on the Continent, he would follow up his researches in the libraries of Rome, or make a *détour* to the village of Kempen, near Düsseldorf, to supplement the same and bring back fresh material for conversation and discussion, to the delight of privileged friends. The 'recreation,' for such, in the best sense, it was, kept his mind, as he would often say, braced and quickened for the resumption of professional duty: nay, he would add, it lengthened his days, as it will certainly prolong his name to a posterity remote from the scene of his daily work."

Examples of active practitioners finding salutary recreation in subjects outside their professional routine, to their own advantage and to that of the contemporary world, are, as we have indicated, as numerous as they are significant, not only in the British Isles, but on the Continent; indeed, wherever the cultured medical man lives and moves. In England we have William Gilbert, whose holiday from practice at the Court of Queen Elizabeth was spent in the field of physics, particularly of magnetism, enabling him to anticipate Oersted and Faraday in the induction that terrestrial magnetism and electricity are two allied emanations of a single force; we have

James Cowles Prichard, whose "horæ subsecivæ" devoted to the physical history of man, fructified in treatises translated into nearly every European language qualifying him to rank as an ethnologist of the first order: we have John Adington Symonds, a busy provincial physician, whose scientific insight and philosophic temper, brought to bear upon a great artistic knowledge, created for him a high position in letters, though this was dwarfed by the achievements of his only son, the historian of the Italian Renaissance; we have in art Seymour Haden in the front rank of etchers; we have Samuel Smiles, whose "recreation" in engineering made him an authority on railway development and industrial biography; we have James Hutchinson Stirling, whose "by-work" was metaphysics, in which he rose (according to Viscount Haldane) to be the recognized expositor of Hegel to the English-speaking world. Indeed, the transition of the "mens medica" to cognate fields of interest in speculation or research is often so natural, so easy, as to explain the fact that there is hardly a subject of thought or a practical *métier* in which the training and the experience of the medical man have not fitted him for proficiency, often for supreme excellence, in its cultivation, so that what was at first even a pastime becomes an absorbing interest, and perhaps a title-deed to name and fame. In the world of affairs, as has often been pointed out, court physicians have risen to posts of trust as diplomats and privy councillors, European annals teeming with examples of such developments in which the British serjeant surgeon or body physician has ended by becoming the confidential adviser, formal or informal, of the reigning monarch. A book, indeed, of fascinating import might be written on the theme, proving, *inter alia*, that the training, theoretical and practical, of the medical man is in a higher than the post-Renaissance sense, "humanistic," rewarding its votary with a sympathy and (intellectually speaking) with a sense of citizenship which knows no limits whatever may be the scene of his life-work or the social plane in which his lot is cast.

DOOLEY ON THE WANE OF ADVERTISING.

"Well, sir" said Mr. Dooley, "I wonder how much it costs to have a pome or a story printed in wan iv thes pop-lar magazines along with all th' good advertisin'? I suppose it comes high. Th' fellow that runs thim magazines must be growin' rich out iv th' potes an' novelists. But I think they're goin' too far in their greed f'r gold. There must be a limit to their avarice. I don't object, mind ye, to their makin' a fair profit out iv their business iv 'idjacatin' people where to get th' best breakfast food or th' most sparklin' hair dye or what kind iv revolver to shoot themselves with. That's all right. But what I object to is whin I pay ten or fifteen cents f'r a magazine expectin' to spind me avenin improvin' me mind with th' latest thoughts in advertisin' to find more thin a quarter iv th' book devoted to lithrachoor.

"It ain't fair. It's a kind iv a confidence game they play on their readers. I don't want thim to be philanthropists, mind ye. They've got to make a livin'. But there ought to be some place in stopping half way. Th' first thing ye know there won't be as many pages in advertisin' as there are iv lithrachoor. Then people will stop readin' magazines. A man don't want to dodge around through almost impentthrable pomes an' reform articles to find a pair iv suspinders or a shavin' soap. Another thing, th' magazines ought to be compelled to mark all lithrachoor plainly so that th' reader can't be deceived. They ought to put two stars on th' end iv it or mark it 'Reading Matther' or print a line at th' bottom: 'Persons answerin' this pome are requested to mention Nobody's.' As

it is now, many iv these articles will fool nine men out iv ten. Ye pick up a magazine an' ye see something that looks like an advertisement. It is almost as well printed an' illustrated. On'y an expert cud tell th' difference at th' first glance. But whin ye get to th' end ye find to ye'er disgust that ye've been wastin' ye'er time readin' a wurruk of fiction. It's very annoyin'.

"Still there are some magazines that respict the' thraditions iv th' profession. They keep lithrachoor in its proper bounds. It is not allowed to encroach on th' advertisin' space. Both are in their proper proportion—eight pages iv advertisin' to wan iv lithrachoor. This isn't bad, but I hope th' time will come whin there will be some publisher bold enough to publish a magazine entirely devoted to advertisin'. Still I don't know that I ought to complain. Whin ye come to think iv th' magazines iv thirty or forty years ago, which only printed a few advertisements an' thim iv a low order, an' look at the sparklin' pages iv th' present day, hundherds of thim brimmin' full an' overflowin' with th' finest produck iv this goolden age iv advertisin'. I suppose there is much to be thankful f'r.—*American Magazine.*

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BE A PESSIMIST.

The *Silent Partner* thus discourses upon optimism and pessimism: The fellow who rocks the boat is an optimist. An optimist is the one who takes the most hopeful view of things. Manifestly the fellow who rocks the boat knows that there are only two possible contingencies—either it will capsize and sink or it will not. The boat-rocker hopes that it will not—and so he's a true optimist.

One of the most optimistic things a man can do is smoke in a powder magazine. This is almost as optimistic as thawing dynamite in a stove oven, and much more optimistic than helping the kitchen fire with kerosene.

All political parties are organized optimism. A man who votes Republican year after year in the hope that some day the grand old party will precipitate the millennium, is certainly optimistic—and so is the fellow who votes on the other side. Socialists are optimists, but among political parties none can approach the Prohibitionists in optimism. They have nothing but hope—not even a chance.

The man who buys green goods or gold bricks is a confirmed optimist. So are the buyers of mining stocks. People who take patent medicines are also inclined to take the most hopeful view of things. So are those who take a drop too much.

The man who puts his head in the lion's mouth at the circus and the man who has a nagging wife are both optimists. One hopes that the lion will not close his mouth—and the other hopes that his wife will. Both are apt to be disappointed.

Shooting craps, playing draw poker, and betting on the races are all optimistic. So is believing in spiritualism, joining the Masons, and going fishing. But none of these is as optimistic as lending money to a friend.

Lovers are optimists, and so are all people who go to law. All embezzlers, forgers, pickpockets and legislators are optimists, for they all take a most hopeful view of their chances of getting caught.

Farmers are optimists and so are automobile manufacturers. The man who buys an automobile is also an optimist—he hopes that the price of tires and gasoline will go down before he goes broke.

We are all optimists.

Optimism is the commonist thing in the world. It is pessimism that is scarce. A good pessimist is so hard to find that there are thousands of people waiting around to hand him money the moment he appears in sight.

Most of the pessimists there are, are bank presidents. A large part of the remainder of the visible supply are running railroads and trusts. Pessimism pays much better than optimism. The best pessimist in the United States is J. P. Morgan. The only hope he ever indulged in, is the hope that the art treasure he has just bought is worth at least half what he paid for it.

John D. Rockefeller made his money as a pessimist. He took it from the optimists who hoped to compete with the Standard Oil Company.

The world is peopled with folks who have great expectations, in other words, optimists. It is run by people who make it a business to see that mose of these expectations do not come true. Some people will say that the sentence just before this is pessimistic. All those who think so are optimists.

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THE SOCIAL ASPECTS OF THE INTERNATIONAL CONGRESS.

Apropos of the approaching convention of the American Medical Association in Atlantic City, those who may be disposed to grumble because all the social arrangements are not exactly to their liking, and to generalize the conclusion that matters of this kind are poorly handled by entertainment committees, may acquire a new viewpoint by reading the communication of the *Lancet's* correspondent at the International Medical Congress and learning how they do such things on the Continent. Writing from Rome, under date of April 14, this correspondent says:

The Congress is open, the rain continues, and confusion everywhere prevails. Everybody has information to give, but it has little or nothing to do with the Congress. The inauguration ceremony, we were informed, would take place in the presence of Their Majesties, the King and Queen of Italy, at the Capitol. Strangers to Rome did not realize at first that this meant a small salon in the Palace of the Conservatori on the side of the Piazza del Campidoglio that faces the Museum of the Capitol. To reach this point there is a steep and winding ascent, very difficult for horses to traverse, the more so as the rain had made the road slippery. To my knowledge at least one cab was overthrown. The public authority, represented by a policeman, sat complacently on the horse's head to give the congressisti time to crawl out from under the cab. When they gradually emerged they were not over-pleased, nor did their mud-bespattered raiment suggest a royal reception. But the real mistake rests precisely in the fact that it was not a royal reception for which they were bound. The municipality of Rome insisted that, as the Congress was meeting in Rome, it was for them to receive the Congress, and this on their own premises, however unsuitable these might be for the purpose. Even so, if great care had been taken not to issue more cards than the space at disposal warranted, though many persons would inevitably still have been dissatisfied, they would not have run the risk of catching cold or of being crushed to death. But the issue of a limited number of invitations would not have satisfied those who look to State functions as an opportunity for supplementing the very insufficient salaries they receive. My cab set me down in front of the entrance to the Capitoline Museum, which, after more than twenty years' absence, I did not recognize. Seeing a great crowd holding up invitation cards, I pressed forward, but was soon roughly repelled and told to go to the other side. After pressing through carriages and gendarmes I reached the other side of the Piazza del Campidoglio, only to be told to return to the entrance where we had already been refused admission. A large number of people were thus harassed and kept running backwards and forwards by these contradictory instructions, and it was only after a fierce struggle that I ultimately

penetrated the yard of the Conservatori, or town councillors' building. Here, again, we were pushed about, men and women shouting angry protests and cries of alarm at the crush. At last there was a fiercer rush, the clatter of horses was heard, there was a gleam of swords, and a squadron of cavalry was upon us. Someone cried "Make way for the King!" and a couple of modest broughams followed, bringing in the royal party. When Their Majesties were safe in the building we naturally imagined that we in our turn would be admitted. It was not so, however. We were kept standing in the rain among the cavalry escort and the empty carriages.

Members Crowded Out by Strangers.

For a while we curbed our impatience by contemplating the colossal hands, feet, and arms of some huge statues. We had also for company the cinerary urn of Agrippina, wife of Germanicus, which was subsequently used as a measure for corn, and a statue of a draped female considered to personify the city of Rome. This was all very interesting, but had little to do with tuberculosis. And why were we not admitted? The sky was of a uniform gray, it rained a little, the yard was damp and cold, and the stones we stood upon seemed to get colder and harder the longer we waited. Several continental journalists, note-books in hand ready to take down the speeches, were in a similar plight, and finally we gathered together and held a council of war. How was the opening ceremony to be described, and what telegrams should be sent to the press? One veteran journalist, who had been here when the Medical Congress met at Rome in 1894, told us terrible stories of the confusion that then prevailed. His explanation was simple. The servants were very badly paid. There were a number of Americans and other rich strangers at the hotels who were willing to pay any price, from 5 lire to 50 lire, for the opportunity of assisting at some sort of a Court function. To obtain and sell tickets to such persons was one of the perquisites of the service. Thus, when the members of a congress arrived they found their places occupied by strangers. As the room where the inauguration was to take place could hold only from 300 to 400 people, and any number of persons had been admitted who had nothing whatever to do with the Congress, only a very small proportion of the members gained admission. When ultimately Their Majesties left, and the few who had gained admittance came out, I observed that not half of them wore the Congress badge. They probably represented the surreptitious trade in tickets just described.

The Congress in the Rain.

When at length I entered the room where the inauguration ceremony had taken place, I looked for a copy of the speech that Professor Baccelli, as President of the Congress, was to have delivered. This had been translated into English and French. Last night I waited more than an hour after the appointed time to see my proof of the English version, and a friend devoted a great part of the evening to dictating and then correcting the French version. All this was to be printed during the night, and, we were told, would surely be at our disposal early in the morning. But there was nothing. No reporters' tables, no translations—nothing whatsoever, and we were not admitted so as to describe what occurred or to take notes of what was said.

A much more severe organization is obviously necessary. There are theatres in Rome, large concert halls, and the Parliament buildings, where the House is not now sitting. It would, therefore, have been quite easy to find room for all the members of the Congress and many others also if the inauguration ceremony had been held, as is almost always the case, in some very large hall or theatre.

The Hygiene Congress met in the Grand Opera House at Madrid and in the Reichstag in Berlin. But above all, measures must be taken to prevent Congress tickets getting into the hands of those who are not members of the Congress. When room is sufficient two sorts of tickets might be issued. The more the general public sees of such congresses the better for the propagandizing work they have to accomplish, but that is not a sufficient reason for keeping the members of a Congress standing out in the rain while total strangers are admitted.

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WHAT DO YOU KNOW ABOUT HYPNOTISM?

The following is reproduced verbatim et literatim from the *Dosha Yakubo* or *The Japan Dosha Druggist:*

Pypnotism Discipline.

Some time past the Home Department have instructed to the local governments regarding discipline of the pypnotism.

There are a tendency of bad effect to the public upon progresses of the pypnotism. The authorities are now investigating the matter for the discipline. The chief point of the intended discipline that there are much deficiencies in the remedy of the woond-body and mania diseases on account of a deficient investigation on the root of the diseases and the frequent practice, it is afraid that, it would cause the patient unconsciously and injure the molars in every respect. It is said that the authorities will let take a step for the discipline by the local governments or it will be made in public by the authorities as a pypnotism disciplinary rule.

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SOUNDS WHICH SIMULATE RALES.

George E. Bushnell, U. S. A., in the *Medical Record,* states that the study of sounds that simulate râles is of especial interest in examinations for pulmonary tuberculosis. There are sounds produced by the contraction of the trapezius, pectoral and intercostal muscles. There are marginal sounds of crepitations heard over the base of the lungs during inspiration, which sounds are not associated with other signs of disease. They simulate friction sounds and crepitant râles. The author believes that they are due to the separation of the costal and diaphragmatic pleural layers during respiration. They are purely physiological, and are found in a considerable number of perfectly healthy persons. Originating in the sternal articulations with the ribs, there are sounds which are most noticeable in the chests of athletes, and which consist of showers of fine crackles and clicks caused by the motion of the articulations. Another class of sounds is caused by the pressure of the stethoscope on fat or muscular tissues.

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TUMORS OF THE FOURTH VENTRICLE.

Anton gives complete histories of five patients with tumor of the fourth ventricle, and reaches the following conclusions from his study: A puncture through the corpus callosum or a puncture of the ventricle relieves the pressure in the posterior fossa as well as the pressure in the fourth ventricle. A relief of pressure in the third ventricle may likewise be secured by means of a callosal puncture. It is even possible for an experienced surgeon to lay bare the region of the fourth ventricle and to penetrate into the fourth ventricle through the foramen of Magendi or from the upper worm of the cerebellum. Even should the tumor or cyst lie in the cerebellum an exposure is no longer impossible. A frequent origin of tumors is the dorsal plexus of the fourth ventricle with subsequent growth against the cerebellum rather than against the pons or oblongata. The value of X-ray pictures in determining the position of tumors is insisted upon, and the opinion is expressed that further experience will render this method of diagnosis of increasing value.

THE SICK ROOM.

THINGS TO NOTICE IN CARE OF THE SICK.

THE *Healthy Home* gives the following timely and helpful instructions for those upon whom devolves the duty of taking care of the sick person:

Few families escape sickness. At one time or another, physical pain and illness enters every household. It often happens that parents have to care for children; and grown folks for parents; and younger people fail to make their loved ones comfortable because they do not know how; when, with a little more knowledge, they would be able to do much toward mitigating the pain and shortening the disease.

Quick Observation.

If you are caring for a sick person, one of the first things to notice is the temperature of the room and the condition of the air. Sick rooms are more often too hot than too cold. As a rule it is better to have the temperature around 60 than over 70.

The moisture of the air in the room is not to be overlooked. Most of our dwellings are defective in that respect. The air is rather dry because not enough attention is paid to thorough ventilation.

The thoughtful nurse will bring a great deal of comfort to the patient by trying to moisten the air in the natural way by effecting a thorough ventilation, or by artificial means, like placing a kettle or a dishpan of boiling water in the room, or hanging a wet sheet in front of the register or the steam radiator. This is particularly important during the winter months, when the windows are kept tightly closed and the room is overheated, and the patients suffer greatly from catarrhal conditions of the respiratory organs.

Bad Odors.

Many diseases, especially if accompanied by fever, are accompanied by a characteristic and unpleasant odor. This odor fills the bed. It adds greatly to the comfort of the patient to keep the bed fresh and clean. If the patient is very sick, keep in mind that the bed sheet should be well stretched and fastened securely with safety pins to the sides of the mattress. This little attention insures great comfort for the patient, who, tossing in bed, involuntarily wrinkles the sheet, not being able to unfold the cutting linen. Such folds of linen are in part responsible for bedsores in very sick people who are compelled to lie on their backs for days.

Watch the Patient's Face, Eyes and Skin.

It is not always prudent to bathe a very sick person, although in a protracted illness a properly given bath adds greatly to comfort.

While giving the bath, the nurse gets the first opportunity to observe the patient bare of his clothes, and she will not miss the chance to notice all of the external apearance the body affords. She will observe the color of the skin; its consistency; being soft, elastic, or dry and rough, hot or cold, wet from perspiration. She may notice swelling in one or the other part of the body. She may notice the vessels of the skin—if they are visible or markedly dilated. She may observe a flat or distended abdomen. The distension may be general or local, occupying the upper or the lower part of the abdomen. A thorough survey of the body will give her the opportunity to observe the changes which may develop during the time the patient will be under her care.

In caring for a sick person, a scrupulously clean thermometer is a necessity, and the temperature should be taken morning and evening, and record made of it, also the condition of the pulse, and the respiration, or number of times the sick person breathes in a minute.

In ordinary cases it is the easiest and best way to take the temperature by placing it under the tongue. This should not be done immediately after the patient has been given any thing hot or cold to drink.

With very sick people, and with infants, the thermometer can be placed in the armpit or the rectum. The same method of taking the temperature must be followed each time, otherwise the change in temperature, which affords the index of the patient's condition, would vary, as the rectum gives a more uniformly high temperature than the mouth, and the mouth higher than the armpit.

How to Notice the Pulse.

Pulse is taken at the wrist; not only the number of beats per full minute, but also the character of the pulse is to be noted. It is to be marked down on the chart whether the pulse was taken while the patient was lying down or standing, because changes in position readily influence the frequency of the pulse beat. The average normal pulse in adult man is from 60 to 70 per minute; while in women it is from 65 to 80. In children the pulse rate is higher; above seven years it will be between 70 to 90, while in younger children—from one to seven years—80 to 100 is a normal pulse. The frequency changes in health, after a meal, from excitement, from the use of stimulants. The same factors will influence the pulse in disease. Therefore, in recording the pulse, the nurse should note whether any of these factors were present; whether at the time of taking the pulse the patient was unduly excited, whether a stimulant had been given a short time previously, etc. The character of the pulse is also to be noted, whether it is strong or feeble, regular or irregular, intermittent or dicrotic. If some beats are feeble while the others are strong, such a pulse is called an irregular one. An intermittent pulse is one where a beat is now and then lost. In a dicrotic pulse, the mean beat is followed by a weaker one.

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KEEPING SICK PEOPLE QUIET.

Not only should all visitors be excluded from the sickroom, but the nurse should not be permitted to carry on conversation with the patient, relate the happenings of the day, nor read to him if the illness is serious. We insist on absolute rest of the body in bed in low forms of fever and debilitating diseases, and following serious surgical operations, yet permit the patient's mind to be filled with all sorts of ideas, which become confused and distorted in his weakened condition, and involuntarily his poor, tired brain labors, and labors, and strives in vain to straighten out the tangled threads of thought awakened by loquacious visitors and talkative nurses, until delirium supervenes.

A friend of Dr. Ashbranner, who is now superintendent of schools in one of the leading cities of this State, told him that he suffered a relapse of typhoid fever three times because he insisted on reading Dickens' novels during convalescence, which overtaxed his strength. Absolute rest of mind is as essential to recovery as absolute rest of body, and this rest should extend well along into the convalescent stage, until much of the lost strength has been regained.

But it is not in the very severe cases only that visitors should be excluded from the sickroom, but in all cases of ordinary severity. A sick person, even though slightly indisposed, does not feel like playing host or hostess to callers, and to do so is to impose upon the afflicted useless exhaustion and consequent fatigue. In such diseases as appen-

dicitis, pneumonia and influenza, and following confinement, patients should not be allowed to see callers until they are able to leave their beds. Diligence along this line will make for the comfort of the patient during the active stage of the disease, and will hasten and shorten the stage of convalescence.

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THE WORRYING PATIENT.

Dr. A. P. Reed writes in the *Trained Nurse and Hospital Review* on the worrying patient, who is "the greatest tribulation of the nurse and too often the physician's Waterloo as far as individual cure is concerned." Dr. Reed is quite right in saying the worrying patient is a wearing patient, wearing herself and all who come in contact with her. Blue thought forbodes worry, and the worryladen victim gets at length to worry over the merest trifle. Such a person needs to "whistle to keep up his courage," as the saying is, and there certainly is something in it; but the nurse too often finds the patient past the "whistling" stage, being so weakened as to need some one to "whistle" for him. In view of the array of long faces often found in the household, the faithful nurse, backed by the occasional "whistle" of the physician for a change off as he makes his calls, can, I am sure, be a big factor in the treatment as well as nursing of these cases.

It is, however, not only the nurse who must "whistle" for the patient to drive away the little blue devils, but it is for the physician to back the nurse in her efforts to uphold the nurse's courage lest she herself be infected by the worrying, trouble-borrowing patient, because nothing is quite as contagious, as irritating, and nothing will spread the indigo over life as quickly as continual fretting and worrying of those people who are never happy unless they can make themselves unhappy over something. We confess frankly that if we had to spend all day and every day, and possibly the nights too, with some patients we know, we would either ourselves take to worrying, or we would be tempted to buy a loaded Colt's as the quickest way out of the quandary.

The attitude of the physician is of immense influence and importance upon the mental atmosphere of the sickroom. The writer well remembers how pleased he was when he was told that he had the reputation of always being cheery and of always making his patients smile. We certainly did the latter more good than if we had visited them with a Jeremiah face and had exhorted them to repentance. Just as there is always hope as long as life lasts, so it is always possible to get your patients to feel better mentally if not physically, if you can get them to smile. And in the worst possible contingency a few remarks full of genuine hopefulness and courage may do more to tide the patient over a critical period than any number of stimulating hypodermics, because, after all, the physical condition of our patients is immensely influenced by their mental attitude. It is for this reason that active membership in the "Don't Worry Club" should be demanded of every physician and of every nurse. Some day we hope to produce a vaccine, bacterin or serum which is anti-worry in its action, and which will be sure death to the blue devils.

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BROADEN THE NURSE'S OUTLOOK.

In the course of a recent address on the topic of Nursing and Public Health, Miss Adelaide Nutting said:

"Today, in the very great majority of our training schools, the entire amount of time devoted to theoretical teaching during the whole three years of training (and three calendar years equal in actual time to four academic years) will be found about equal to one term or half-year of ordinary high school work. And yet this feeble body of theory must cover the sciences and all those prin-

ciples by which we stand or fall in our actual work.

"If we are to reconstruct our system of educating nurses to meet present demands, we must in our schools get far beyond the idea that practical efficiency is all that is needed to make a good nurse; we must set for her higher ideals. Do we seriously believe that we can develop in our students any real mental power in their work, or expect them to maintain high ideals in it while we require of them as students ten hours a day of hospital work (yet these hours exist in several hundred training schools —nearly 50% of the entire number in the country—and in many the hours are even longer); or while it can be truly recorded that nearly 25% of all training schools in this country still send their students out in families to act as nurses, and that remuneration for their services goes in almost all instances directly into hospital funds; that the great majority of training schools, probably not less than 90%, have not in their staff one single paid instructor whose whole time is devoted to teaching students while a pathetically large number do not own to having anything whatever in the way of a library for their students? Out of records received recently from over 800 schools, 299 either stated that they had no books or ignored the question on that subject. And in this whole country, where such enormous sums are given for general education, and for technical, agricultural, medical and other professional schools, there is not, as far as we know, one single training school provided by endowment or State aid for the proper conduct of its work. The hospital is left to struggle alone with an educational problem of which it can only adequately carry its due share. There are, of course, causes for these conditions. They should be intelligently and patiently studied. If we believe, as we say we do, that the work of the nurse is already of great and definite value; if we see, as some of us think we do, that it has potential values as yet but dimly apprehended; that it is destined to play an increasingly important part in the maintenance of public health and welfare, then the processes by which that nurse is made in training schools are clearly of vital importance, since any conditions which make them seem undesirable, unattractive or unintelligent, or place them at a disadvantage in essential methods and results in comparison with other educational processes, react finally upon the entire public, sick and well, hospitals and physicians first of all. I would urge, therefore, upon boards of trustees and governors of hospitals the paramount importance in the community of the educational system they have established, are guiding, and are under obligations to maintain, not merely as a part of the hospital, with hospital efficiency and economy only in mind, but with wider outlook, as a part of the general educational system in which it should have an honored place.

"In the last analysis the great improvements in nursing must come from within; they must be brought about by nurses for nurses. If we honestly believe in our work and its value to our neighbors, we will count no sacrifice too great to make that it may be strengthened; we will serve it and honor it; we will hold it high."

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THE DISTINCTION BETWEEN MEDICAL PRACTICE AND NURSING.

Nobody will deny, says the *Dietetic and Hygienic Gazette,* that there is a fundamental difference between the practice of medicine and the practice of nursing. We do not see how anyone can deny that in many particulars the functions of physicians and the functions of nurses meet and overlap. Where is the line? Or is the field of medicine joined to the field of nursing by a common territory which nurses and

doctors can occupy in amicable relationship? Evidently the doctors are anxious to settle this question, as is shown by the movement inaugurated lately against the nurse-anesthetist, which we have reported from time to time in the *Gazette*. As the controversy flourishes, the debatable territory seems to grow wider. Dr. Bristow, of Brooklyn, writing in the *New York State Journal of Medicine*, finds other things to condemn in the practice of nursing in this State. In reviewing the Doctor's arraignment, we will use his own words as far as possible:

"The law of 1907 thus defines the practice of medicine:

"'7. The practice of medicine is defined as follows: "A person practices medicine within the meaning of this act, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, or physical condition, and who shall either offer or undertake, by any means, or method, to diagnose, treat, operate, or prescribe, for any human disease, pain, injury, deformity, or physical condition.'

"The condition of affairs in the [New York City] Department of Child Hygiene at present is as follows: (1) Nurses make all routine examination of children in class rooms for diagnosis. This is done once a month. (2) Nurses pass on all cases referred to them by school officials, except when the medical inspector happens to be present, making physical examinations for adenoids, enlarged tonsils, etc., which happens two days every two weeks when the nurse may refer doubtful cases to the inspector. (3) Nurses also make visits to homes of absentees for the purpose of determining whether the absent children are ill of contagious disease or not. (4) Nurses are also employed to take cultures. (5) Nurses also make exclusions from schools, which, of course, involves making a diagnosis. The Board of Health will reply to these statements that subsequent to the report of the nurse a diagnostician is always sent for the purpose of comfirming the diagnosis. This has always been done, and is still done where a medical inspector makes the diagnosis. The evil in the present system consists in the fact that a nurse is employed for the purpose of determining whether or not a child is suffering from a contagious disease. If her diagnosis is negative, it is not checked up, and it is the overlooked cases which are fraught with danger, not those which are recognized. The city exercises the greatest care in checking up the reported cases. Thus where measles or chickenpox is reported, the diagnosis must be confirmed by the medical inspector of the contagious disease division. A diagnosis of scarlet fever must be confirmed by a diagnostician of the department. Smallpox and chickenpox in adults must be checked by a diagnostician and usually the chief of the division of contagious diseases. The original responsibility of the diagnosis in the Department of Child Hygiene still rests with the nurses who constitute the first line of defense. Recognizing the weakness of such a position the nurses in the Department of Hygiene were lately given a two months' course of lectures on contagious disease, and recently, I am informed, on complaints from public school principals that the diagnostic work was unsatisfactory, schools being exposed to overlooked contagions, the nurses were taken to the Willard Parker Hospital for contagious diseases in relays and shown the various cases with a view to educating them.

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"Nurses now establish quarantine, give directions as to care of case, placard the house, visit the case twice a week, take cultures, pass on the completion of the disease, raise quarantine and issue school permits, all in violation of

the law. Nor do the nurses relish their new duties, for which they are paid no more than when they performed the duties strictly pertaining to a nurse.

* * *

"Another matter which we ourselves some years ago abandoned wholly to the laity was the matter of qualification of nurses. What has been the result? Because of the utterly absurd educational requirements which a lay board demands of the pupil nurse before she can enter a school as a probationer we are today confronted with a shortage of nurses in all our large hospitals. So bad is the situation that at a recent committee meeeting in New York, Dr. Goldwater, the superintendent of Mt. Sinai, told the members of the committee that the trustees of Mt. Sinai had formally notified the department that in admitting nurses to its training school it would be obliged to disregard its requirements. Everyone here knows perfectly well the forcing process to which the pupil nurses have been subjected in training, so that as a result, on graduation, the training schools are presenting to the profession young women who have been half-trained in many purely medical topics entirely out of their province and too little trained as nurses; often, moreover, broken in health by the severe strain to which they have been subjected by totally needless hard study on subjects which do not concern them. The proper and natural administrators of any nursing system are physicians and not a lay board, or a few ambitious nurses with a talent for intrigue and despotism."

We have quoted enough of Dr. Bristow's address to show the drift of the opposition of medical men to some of the newer lines of work in which nurses are engaged and to point out the Now York City Health Department as chiefly responsible for this invasion of the field of medicine.

In commenting upon Dr. Bristow's remonstrance, the president of the Medical Society of the State of New York, Dr. Wendell C. Phillips, said, in part:

"The nursing problem is serious. If I am correctly informed, the trained nurses themselves are at least partially responsible for the State law of registration, in which a standard has been set which seems to be out of all proportion for the requirements of a trained nurse. The training in the nurse's training schools should fit the woman for her vocation of nursing. The curriculum in most of the schools is so long and so severe that it results in turning out women who are half-doctor and half-nurse. It is unnecessary to make doctors out of nurses. We want competent nurses only and in my judgment two years is sufficient for this purpose. We should not make doctors out of nurses, but we should make nurses out of them.

"The Health Department of New York City should not be permitted to infringe upon the law. If they are employing nurses to do work which only registered physicians are legally qualified to perform, it seems to me that the evil can be stopped by resorting to the enforcement of the law, and this should be done."

Since the law defines the practice of medicine so clearly it would seem necessary that our newer law, which provides for the registration of trained nurses and the conferring of the title "registered nurse," should also define the field of the nurse so clearly that there could be no question as to what the nurse may do, whether she works for the Health Department or for a private employer. Such a definition surely must be forthcoming, and will be a relief to us all.

For our own part we believe that the trained nurse has no desire to practice medicine, or to usurp any of the rights of the medical profession. Her field is broad enough when confined strictly to

the work for which her training school fits her, and the great body of working nurses are content to stay in this field. Curiously enough, whenever we find a nurse straying beyond the imaginary line that now bounds her field on the north, south, east and west, we find some enterprising doctor either leading or driving her.

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PUTTING A CHILD TO SLEEP.

All methods of putting children to sleep artificially by means of monotonous sensations are strongly censured, says the *Healthy Home,* including the crowing of lullabies and the rocking of babies in cradles or simply in the arms. Rocking the child in the arms or cradle is said to produce sleep partly because consciousness is fatigued by a series of monotonous sensations and partly because at the same time artificial anemia of the brain is provoked.

The approximate period of sleep necessary for children at different ages is given as follows: Between the ages of one and two years there should be from six to eight waking hours; between two and three years, seven to nine waking hours; between three and four years, eight to ten waking hours; between four and six years, twelve to fourteen waking hours; between nine and thirteen years, fourteen to sixteen waking hours.

There is much common sense in the foregoing remarks, but there is also a tendency to rather unduly press the point as to the harmfulness of oversleeping, particularly in the case of very young infants. Rocking a child in the cradle to any great extent is doubtless harmful, but it is difficult to understand in what manner the "crowing of lullabies" can affect the health of a baby. It is also no easy matter to fix the amount of sleep that a person—child or adult—should take by any hard and fast rule; a large degree of latitude must be allowed in this respect, as it is an absolute fact that individuals of different temperaments and constitutions require varying periods of sleep.

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OVER THE HILLS TO THE POOR HOUSE.

Over the hills to the poorhouse,
I'm setting a sizzling pace;
I've mortgaged my home for an auto,
And I'm playing her straight and for place.
There are others well up in the running,
But I'm holding my own, you bet;
I can see the roof of the county farm,
And I'm going to get there yet.

Of course, I can't afford it
(There are very few who can),
But the family whined about it,
And insisted I wasn't a man
If I didn't get six cylinders,
A tonneau, some tires and plugs,
And go out and speed on the highway
With the automobile bugs.

So we plastered the house with a lien,
The second, I'd have you know;
The first was for part of the purchase price,
And a few other things I owe.
My wife said it would be a saving,
We'd soon pay for the machine
With the difference between the car-fare bill
And the cost of the gasoline.

The girls had to hire a "shuffer,"
A lantern-jawed son-of-a-gun,
And when Sonny goes out for a joy ride,
I'm sorry he hasn't one;
For whenever he hits a lamp-post
Or sends the car into a ditch,
I cough up some more spondulix
To fatten the bloated rich.

Once I was known for my wisdom,
My business foresight it was keen,
But that was before I invested
In an aid-to-bankruptcy machine.
Now others are getting the rhino,
Their assets with solvency shine,
While I'm on the road to the poorhouse—
The Home for the Indigent, mine.

Whoopee! Clear the way, for I'm coming—
Just passed by a bunch of my friends,
All bent in the same direction,
Where the road of the scorcher ends.
It's the pace of a drunken sailor,
At the helm of a rudderless ship;
Over the hills to the poorhouse,
I'm hitting a lively clip.

—*Exchange.*

REFRACTION.

TWO CONDITIONS WHICH INJURE VISION.

IN an article in the Buffalo *Medical Journal,* Dr. F. Park Lewis, the head of the American Association for the Conservation of Vision, discusses two conditions which injure vision. He says:

"The importance of human vision is so great that the loss of even a portion of the sight which might have been saved may so limit the usefulness of the person suffering such a loss as to change the whole course of his career. If, for instance, after an acute inflammatory condition of the eye, the patient emerges from the illness with but one-half of his normal vision, or if after the healing of a corneal ulcer absolutely normal vision for distance remains, but for the working range, by reason of the position of the corneal scars, is materially reduced, the general result would seem to be successful and the patient will have recovered, but the limitation of vision will throughout his whole future life prevent him from doing work which he might otherwise be qualified to do. It would limit his studies, if it occurred in childhood; it would prevent his adoption of any mechanical trade requiring accurate vision, such as watchmaking, engraving or work of that kind. It would narrow his opportunities and circumscribe his possibilities in many ways.

"Furthermore, injuries which are promptly and skillfully treated under certain conditions may leave almost absolutely normal sight, while delay or the application of improper methods may not only jeopardize the integrity of the vision of the affected eye, may not only result in blindness of that eye, but through sympathetic involvement of the fellow eye the result may be absolute blindness of the patient. Happily, modern methods have rendered such disastrous results far less common than they were a quarter of a century ago, and still they occur often enough to make us realize that the employment of conservative measures such as are designed by promptitude and efficiency to save human sight are important enough to receive consideration.

"I want, therefore, to emphasize some of those conditions in which the early recognization is imperative if sight is to be saved. One of the commonest of these which we meet is ophthalmia neonatorum. Possibly so much has been said about this during the last few years that it will be necessary only to refer to it. There are some facts connected with it, however, which may bear repetition and concerning which I may say a few words. We all know how infection occurs in the earlier cases, but we forget sometimes that there is such a thing as a late infection. Even the general public is now becoming familiar with the nature of the infection, the methods of its prevention and the necessity of its early and prompt treatment. Still, when I say to you that in so progressive a center as that of Boston, of 116 cases, 114 occurred in the practice of physicians and only two under the care of midwives, and of these 27 emerged with defective eyes and 9 were absolutely blind, we can not say that the time has gone by when every one knows what to do for ophthalmia neonatorum.

"If we are to control the disease of ophthalmia neonatorum, it must be by the concerted effort of the medical profession, the health authorities and the public. The following suggestions were made at the recent meeting of the American Medical Association to the Department of Hygiene and Sanitation with a view of standardizing methods of prevention which could be adopted in the

several States. There seems to be little doubt that within the next few years, if activities continue, it will cease to be the serious menace that it has always been to the eyes of the new-born.

"Blindness from birth infections has contributed one-fourth to the population of all the schools for the blind in the country. The existence of these infections is due to the failure on the part of the attendant, whether physician or midwife, to use the proper preventive treatment for the child's eyes during the first few minutes after it is born.

"Responsibility for this large amount of unnecessary blindness does not rest primarily upon the midwife and poor overworked doctor, but it does rest upon society, which means every intelligent individual who knows what should be done and whose influence should be used to aid in the protection of these helpless babies.

"The second condition which results with great frequency in lowered visual acuity is strabismus or squint. It formerly was not at all uncommon for physicians to advise the parents of a squinting child to wait until the boy was 16 or 17 years old before undertaking to have anything done for his relief. At six or seven years I have often found it impossible to restore the inturned eye to full visual acuteness. Nature is exceedingly unwilling that there should be useless functions. Strabismus is almost invariably due to the fact of there being two images in their nature like that obtained by a stereoscope. If the two sides of the human machine are mechanically different, it is impossible to force the two images to perfectly merge the one into the other. In the effort to accomplish this, the eye having the higher defect, or sometimes alternately, first one eye and then the other, will be drawn in. When the two eyes are almost but not quite in line double vision results. This is exceedingly uncomfortable. When the annoyance has persisted for a sufficient length of time, the eye which is turned in learns to suppress the image formed on that side. This is equivalent to saying that the visual center corresponding to the inturned eye has ceased to be active. When this dulling of a nerve center continues week after week, for several years, the nerves in that portion of the brain cease to develop and we have in the corresponding eye permanent amblyopia. If, on the other hand, by correcting the focal difficulties so as to make the two eyes functionate normally, making the visual centers equally active on both sides, or even if we have an alternation of the squint so that one eye sees equally with the other, although its fellow may be turned in, we perpetuate the visual function and sight is preserved.

"Whenever strabismus is found it should be placed under observation at the very earliest possible date. I have myself prescribed glasses for a squinting baby who is only five months old. In another instance, in that of an infant a year and thirteen days old, whose eyes converge badly, high hypermetropia was found in each eye, but differing in amount. The strong glasses which were necessary to make that baby see and to straighten its eyes and which were determined by means of the ophthalmoscope and the retinoscope not only straightened the baby's eyes but gave the little sufferer such comfort that two years later when the glasses had to be taken away in order to have the frames repaired he begged to have them given back to him, saying: 'I want my eyes.' That child will therefore have normal vision in each eye, fitting him for any work that may be undertaken. Had the use of glasses been postponed until the eyes could not functionate normally the inevitable operation might have restored parallelism, but it could not have restored vision, and a correction so obtained would in all probability be followed by a divergence later in life."

APPARENT ACCOMMODATION IN APHAKIC.

Accommodation is defined by F. A. W. Kröner to be the power of the eye for retaining the same optimum of visual acuity at different distances. For practical purposes can be added—and showing this same optimum at a constant distance with different lenses before the eye. The visual acuity depends on the minimum separable. This power of the eye depends for the greatest part on the adaption of the lens. Accommodation not dependent on this power we call "apparent." Kröner now investigates, if apparent accommodation truly exists, and wants to explain it, if present. His own investigations are preceded by a survey of the literature, some 125 publications.

He examined 40 aphakic eyes. The essential requirement is that the vision remains the same at different distances at which we examine. In all cases the corneal astigmatism, the form and size of the pupil and of the opening of the secondary cataract, was measured; then the vision of each eye separately at six meters with Koster's optotypes. Generally the best correction with spherical glasses was first sought, then with simple or compound cylinders. The lenses were put in a frame with a constant distance between glass and eye. The vision was determined in the same way for 25 cm. distance, for which the same optotypes were used, but reduced by photography responding to distance. The head of the sitting patient was fixed, the optotypes put so that the visual plane had not to be lowered. This prevented narrowing of the palpebral fissure. As much as possible the line connecting the corneal apex with the optotypes was perpendicular to the center of the correcting lens. Only now and then the examination was done with artificial light; as a rule good daylight was used. Convergence was also prevented; closing of the palpebral fissure not allowed.

When accommodation was found, skiascopic examination was made with urging to relaxation as well as to exertion, and the corneal curvature was measured with Javal's ophthalmometer. Other reflex images as those of the cornea were looked for in the dark room and with Tscherning's ophthalmophakometer.

Kröner found that in a certain number of cases of aphakia accommodation is present (in a little less than half the number of his cases). It is mostly small, about 1 D.; now and then higher up to 4 D. It appears more often at short distance than at 6 m. Inaccurate examination and wrong conclusions misled many in finding larger values.

It does not depend on a change in the relation of the refractive condition and the length of the eye. It was not proven on examination, and a number of facts were found contrary. It must be explained through the immutable relations of the aphakic eye, namely, through the regular and irregular astigmatism and the spherical aberration, which last one also depends on the correcting lens.

The chromatic aberration, the imperfect centration, the diffraction, the opacities in the media, play a small rôle. Everything which diminishes the vision favors the accommodation. The opening in the secondary cataract is mostly too large to have any influence. The difference in magnitude of the accommodation at 6 m. and at 25 cm. is chiefly explained with the stronger spherical aberration, dependent on the stronger correcting lens and the larger angle of incident of the light rays. The difference is still stronger at a distance of 10 cm. Smaller faults appear easier at shorter distance (25 cm.), not seeing exactly through the center of the lens, and the somewhat smaller pupil may have some influence; one is also more inclined for maximal exertion at nearer vision than at a distance.

The true refraction of the aphakic eye is not given by the strongest positive or weakest negative lens, which is chosen for sight at 6 m. If the refraction was

exactly regular and the choice of the preferred lens only dependent on the influence of the pupil or opening of the secondary cataract on the size of the diffraction circles, then the intermediate lens would give the refraction. But as astigmatism, spherical aberration, etc., influence the indifference in the choice of the lens, we can not speak of just *one* refraction. The eye can not be corrected entirely with spherical and cylindrical lenses. Sometimes *one* lens will give the most favorable dispersive figure and this could be considered the refraction-determining one; often these figures differ too little with different lenses to produce a different vision. The distance of the cones to each other and their relative position in different directions will also have influence. This holds good also for the eye with lens, when its accommodation is paralyzed.

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CORRECTION OF ERRORS OF REFRACTION FOR MICROSCOPIC WORK.

W. B. Leishman, in the British *Medical Journal,* points out that the eye-strain which not infrequently results from prolonged use of the microscope, especially when working with high powers and artificial light, is often so great as to cause considerable discomfort and headache, and may even lead to the abandonment of microscopic work, except for brief examinations. In many cases this trouble is caused by errors of refraction, more particularly by some degree of astigmatism. If this astigmatism is considerable, the microscopist is practically certain, in these days, to be aware of it and to possess glasses which correct his particular error, but if it is small it may never be detected until advancing years lead him to consult an oculist as to his first pair of presbyopic glasses. In either case, when he attempts to work at his microscope with spectacles or pince-nex *in situ,* he is certain to find them so uncomfortable and inconvenient that, sooner or later, he discards them and trusts once more to his unaided vision and his powers of accommodation, with the frequent result that continuous work becomes increasingly difficult and the effects of eye-strain more conspicuous.

A small device has been designed with a view to correcting the error of refraction without employing spectacles. It is so obvious and simple that it is very probable that something similar may have been described and used long ere this, but, since the writer has been unable to discover that this is the case, it appears worth while, for the sake of others similarly situated, to describe the ocular cap which he has made for his own use. The increased definition which has resulted from the use of this cap is unmistakable, and there has also been a marked lessening of the feeling of strain which used to result from long hours of high-power work.

No lengthy description is needed, the principle being merely that the lens necessary to correct the error of refraction of the eye commonly used is fitted accurately into the center of an aluminum carrier, so constructed as to form a cap which may be placed over the microscope ocular. In the case of a lens with cylindrical correction for astigmatic error the principal meridian is permanently marked on the carrier by means of an arrow arranged to set vertically. As most workers employ oculars of the same maker, the external diameter of which is approximately the same, the cap may be made to fit them all by arranging to have the internal diameter adjusted to fit the largest ocular used.

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CONCOMITANT SQUINT.

C. A. Worth, in *Ophthalmology,* states that the onset of squint is most frequent in the second and third year of life. Some fusion faculty is present and remains effective until particular strain, illness or school renders it insufficient in the face of ocular difficulties. That squint is determined by motor difficulties

is disproven by cases of motor imbalance up to 15% without squint. At least 90% of amblyopia in squinting eyes is acquired. In the rare cases of amblyopia without squint there is generally a high degree of astigmatism in the amblyopic eye and none in the other, and the amblyopia probably arises from the selective use of the good eye.

In all cases of squint we must cure the amblyopia "ex anopsia," remove the deformity, and secure binocular vision. Atropinizing the fixing eye alone is of use only when the squinting eye retains the power of fixation. The fixing eye may be occluded when the squinting eye has lost the power of fixation for at least one month. More is rarely necessary or useful. Correction of ametropia is important. It may be applied as early as the age of three months, as we know that accommodation comes into play at an early age. Operation, as a rule, should not be attempted until all other means have failed.

Divergent squint associated with high myopia, due to insufficiency of maintaining excessive convergence, is becoming rarer as the eyes of school children are examined and corrected systematically. Another form of divergence may be called neuropathic. It usually dates from infancy, is occasional or constant, unilateral or alternating, and associated with feeble fusion if any. Vision is perfect, except in the constant unilateral cases, which show amblyopia. Convergence is always defective and variable. The subjects are bright and intelligent, but nervous. It is three times more common in females than in males.

In heterophoria there is a defect in the relative motor balance, which is kept in check by the fusion faculty. This is the reverse of squint. In most cases it is impossible to demonstrate any particular muscle defect, but the effect is manifest in an abnormal tendency to convergence, divergence or vertical deviation. Emmetropic sufferers from eye-strain often show muscle imbalance as a cause of their symptoms. Hyperphoria is the least common and most troublesome. For this variety prisms are invaluable for low degrees.

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VERONAL IN DELIRIUM TREMENS.

Porben, in the *Therapie der Gegenwart,* refers to the mortality from delirium tremens, which varies, according to different authorities, from 3 to 19%. Porben treated 660 cases during the years 1901-1909. In the period from 1901 to 1906 he used chloral, and had a mortality of 9%. From 1907 to 1909 he treated 264 cases with veronal, the usual dose being 1 gram given in warm tea. During this period the mortality fell to 3.4%, and two of these cases died from croupous and two from bronchopneumonia. He states that it appears as if we possessed in veronal a remedy which is an antidote to the psychomotor manifestations of delirium tremens, and that we have therefore got a step forward in the treatment of alcoholic delirium by making use of this remedy, which diminishes the patient's restlessness and produces a natural sleep.

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USE OF COLORED SQUARES ON DISTANT TEST TYPES.

At the usual distance of six meters, says E. F. Snydacker in *Archives of Ophthalmology,* it is possible to detect central color blindness by means of red and green squares attached to the Snellen charts. He recommends two in red, 2½ mm. and 5 mm. square and two in green 3 mm. and 6 mm. square. At six meters he says that those who can not distinguish the colors of the smaller squares probably have a color defect, while those who can not make out the colors of the larger squares should be given a most careful examination with the perimeter.

MEDICAL PHARMACY.

OSMOTIC PRESSURE AND ITS PHYSIOLOGICAL BEARING.

MR. BENNETT, in a paper read before the Pharmaceutical Association of Great Britain, began with an explanation of osmotic pressure, using as an illustration the behavior of a portion of the epidermis of a fresh leaf of *Tradescantia discolor* when subjected to solutions of sugar and postassium nitrate and viewed under the microscope. The phenomenon of plasmolysis was extended to the red blood-corpuscles, and the differences noted in the behavior of the corpuscles in water and sodium-chloride solution. With a solution containing 0.91% of sodium chloride the red blood-corpuscles remain intact and retain their hemoglobin, but they shrink so that their volume becomes smaller. Mr. Bennett called attention to the microscopes on the table, which he had arranged to show these differences. Next was dealt with the methods of measuring osmotic pressure. He took as an example the diffusion of syrup and water, which, when placed in a vessel together become homogeneous in time, and added that this power of diffusion can be measured by enclosing the syrup in a membrane and employing a manometer in the manner first laid down by Pfeffer. The osmotic pressure of syrup is found to follow a law which is analogous to Boyle's law. But it is the indirect method that is more convenient for the measurement of osmotic pressure and which the authors employed in their experiments. This method results from the theory of dilute solutions established by Van 't Hoff and Arrhenius, and consists in calculating the osmotic pressure from the depression of the freezing-point caused by the substance in solution. The freezing-point of a solution is usually lower than that of the pure solvent, and the extent of the depression of the freezing-point depends upon the vapor pressure of the solution, and is therefore related quantitatively to the osmotic pressure. The apparatus devised by Beck was on the table, and its working was explained by Mr. Bennett. The thermometer employed is a very delicate one, graduated in one-hundredths of a degree, and the outer tube contains a freezing-mixture of ice and salt. The solution which is being tested becomes cooled below its freezing point as shown on the thermometer, and then when stirred solidification is brought about with a rise in temperature to the true freezing point of the solution. Briefly, solutions which have the same freezing point are iso-osmotic, or, as they are generally termed, are isotonic. The theory underlying this conclusion was outlined, and the application made of the method to mammalian blood. Next followed a consideration of the physiological aspect. Body-lymph and blood-plasma are the natural mediums in which the cell units perform their functions, and blood-serum, which separates after these fluids coagulate, may be looked upon as the mother liquid of the human body. It contains about 0.85% of inorganic salts and about 8% of proteins. In such a fluid blood-corpuscles naturally retain their size and shape, and as do the corpuscles in a solution that is isotonic with blood-serum. Solutions which have a lower osmotic pressure than blood-serum are called hypotonic, and those of higher osmotic pressure, hypertonic. Hypotonic solutions cause hemolysis of the corpuscles, while hypertonic solutions cause a shrinkage of the corpuscles.

Normal Saline Solution.

is the most familiar example of an isotonic solution. This is a solution of sodium chloride containing 0.91 gram in

99.09 grams of distilled water. It is employed for intravenous, subcutaneous, and rectal injections to replace liquid lost from the body during hemorrhage or acute diarrhea, or to dilute the body fluids, and, by promoting diuresis, assist the removal of toxic substances. It is used in abdominal surgery to wash out the peritoneal cavity. The rise in temperature which follows intravenous injections is now attributed to bacterial proteins which can not be removed by filtration or destroyed by sterilization. Normal saline solution is not an adequate substitute for blood-serum because of the absence of calcium and potassium, which Ringer showed are essential to the life of the organism. The authors have devised an improved formula for this. The formulæ given here were on the blackboard, and embody the results of experimental work carried out by the authors. Mention was made of the use of Atlantic sea-water in place of normal saline solution, in the use of which the reaction which often follows is doubtless due to irremovable proteins.

Ringer's Solution.

Sodium chloride	0.88	gram.
Potassium chloride	0.025	gram.
Calcium chloride	0.02	gram.
Sodium bicarbonate	0.015	gram.
Distilled water to	100	c.c.

Trunecek's Serum.

Sodium chloride	4.92	grams.
Sodium sulphate	0.44	gram.
Sodium phosphate	0.15	gram.
Sodium carbonate	0.21	gram.
Potassium sulphate	0.40	gram.
Distilled water to	100	c.c.

Cheron's Solution.

Sodium chloride	2	grams.
Sodium sulphate	8	grams.
Sodium phosphate	4	grams.
Distilled water	100	c.c.

Local Anesthesia Solutions.

1.

Beta-eucaine lactate	0.20	gram.
Sodium chloride	0.87	gram.
Distilled water to	100	c.c.

2.

Beta-eucaine hydroch	0.20	gram.
Sodium chloride	0.82	gram.
Distilled water to	100	c.c.

3.

Novocaine	0.25	gram.
Sodium chloride	0.87	gram.
Distilled water to	100	c.c.

4.

Novocaine	0.5	gram.
Sodium chloride	0.82	gram.
Distilled water to	100	c.c.

5.

Novocaine	2	grams.
Sodium chloride	0.5	gram.
Distilled water to	100	c.c.

Hypodermic Injections.

1.

Morphine tartrate	0.5	gram.
Glucose (Merck)	0.268	gram.
Distilled water to	10	c.c.

2.

Strychnine hydroch	0.1	gram.
Sodium chloride	0.079	gram.

or

Glucose	0.442	gram.
Distilled water to	10	c.c.

3.

Apomorphine hydro	0.1	gram.
Dilute hydro. acid	0.1	c.c.
Sodium chloride	0.055	gram.

or

Glucose	0.3	gram.
Distilled water to	10	c.c.

Simple Solutions (Percentage w/w).

Glucose (Merck)	5.00
Sodium bicarbonate	1.32
Sodium bromide	1.75
Sodium diphosphate	2.60
Sodium phosphate	4.45
Sodium sulphate	4.00
Calcium chloride (anhydrous)	1.17
Calcium lactate	4.25
Magnesium sulphate	6.15
Potassium chloride	1.11
Potassium sulphate	2.07
Borax	2.85
Phenol	2.93

The authors protested against the use of the word "serum" in connection with Trunecek's and Cheron's solutions, as these are both strongly hypertonic. The table of simple substances is useful to dispensers who may be called upon to make isotonic solutions for special purposes—*e. g.,* sodium bicarbonate intravenously injected is recommended in the treatment of diabetic coma. It was mentioned incidentally that although in sterilizing the bicarbonate solution carbonate is formed, this only amounts to a conversion of about 15% in ten minutes' boiling. An outline of the prepa-

ration of salvarsan solution was given, and it was stated that the majority of physicians prefer intravenous injection for this remedy. The manufacturers' directions produce a hypotonic solution, and it requires the addition of sodium chloride to obtain isotonicity. The local anesthesia solutions are used for various purposes, and the isotonic state is necessary or destruction of tissue cells with necrosis and sloughing may occur. Cocaine has now, said the authors, been replaced by beta eucaine and novocaine in these solutions.

Hypertonic solutions are employed for special purposes, as in cholera and acute summer diarrhea, where subcutaneous injections are administered; in the latter case a 5% solution of glucose in normal saline solution is used. The B. P. injections were referred to and corrected in the case of morphine tartrate and apomorphine. Strychnine is much employed for hypodermic injection. Reference was also made to the use of tuberculin injections, the authors preferring normal saline solution for dilution, and to intraspinal injections, a 5% solution of stovaine with glucose being used, although the authors suggest that dextrin would be a better substance for increasing the specific gravity. In concluding the paper it was mentioned that it is intended to direct attention to the preparation of isotonic eye-lotions.

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NO STANDARD FOR DIGITALIS.

The *Physicians' Drug News* points out that the exact chemical constituents of digitalis have never been definitely determined, hence there is no standard. The result is a great variation in the strength of digitalis preparations of similar names.

Digitalis contains several important constituents, principally glucosides, to which it owes its medicinal value, but none of these constituents is capable of representing the whole drug.

The principal constituent of digitalis is loosely termed "digitalin." Since it is not official care should be used in employing it to know just what is being used.

The Hygienic Laboratory ascertained: "That different digitalis preparations of the same name vary greatly in strength is familiar to all physicians who have used the drugs, and by physiologic methods these differences have been shown in both this country and Europe to be from 100% to 400%."

In our opinion a carefully prepared extract of fresh digitalis leaves, collected from plants of the second year's growth, at the commencement of flowering as required by the Pharmacopoeia, is the only concentrated preparation of digitalis that fully represents this valuable drug.

This extract may be physiologically standardized, but since the methods employed are unofficial and differ materially we have as yet no satisfactory standard. It is hoped that the next revision of the Pharmacopœia will supply a standard that will be satisfactory.

Chemistry of Digitalis.

The active constituents of digitalis are known as digitalin, digitonin, digitalein, digitoxin and digitin.

Digitalin is supposed to more nearly represent the drug, but there are four distinct digitalis, as follows:

French, amorphous digitalein, also known as Homolli's amorphous. A mixture of glucosides, principally digitalin.

French crystalline digitalin which consists largely of digitoxin.

German digitalin is a mixture of glucosides of variable composition, chiefly digitonin, obtained principally from the seeds, medicinal value uncertain.

Digitalin, True. A glucoside obtained from the leaves and seeds of digitalin. Commercially from German digitalin.

In addition to the four digitalins we have:

Digitaloin, also known as crystallized digitolin and digitin, is a glucoside ob-

tained from the leaves, has no physiological action upon the heart when taken by the mouth.

Digitoxin, the chief constituent of French crystalline digitalin. Action variable, use not recommended.

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AN ANTAGONISTIC MIXTURE.

Francis Hemm, in *Meyer Brothers' Druggist,* propounds the query out of his own experience: What criticisms have you to make on the following prescription?

Spts. frumenti	4	ounces.
Strychnian. sulph	1/30	grain.
Chloral hydrate	40	grains.
Potassii bromidi	1½	drachms.

One fourth at once, next dose in 15 minutes, next one hour and a half.

Answer: In criticising this prescription we will, as a pharmacist, dwell upon the pharmaceutical phase of same more especially.

If this prescription were presented for compounding with us we would at once conclude that the doctor has a desperate case on hand, but whether or not we would risk dispensing same would depend upon the following circumstances. Is the prescriber a reliable and educated physician?

If so we would communicate with him in this case to definitely assure ourselves that he intended the doses prescribed and relieve us entirely of all responsibility in compounding same.

If we knew the prescriber to be a person of questionable ability or a person of intemperate habits we would refuse to take the responsibility of compounding it.

To give 3/20 grain of strychnine sulphate and three ounces of whiskey, thirty grains of chloral hydrate and sixty-seven grains of bromide of potassium in the space of less than two hours (which is the quantity here given if every dose was intended to be one-fourth of the whole), is certainly on danger line if not beyond it.

Why a prescription should be made up of physiological antagonists like this one is something which pharmacists wonder at, but it is not their province to criticise therapeutics of a prescription.

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STAPHYSAGRIA.

Wm. Leming, in the *Eclectic Medical Journal,* states that the action of this drug has never been clearly defined. While its primary sphere seems to be the central nervous system, a number of its most important actions apparently are dissociated from this field.

The drug is poisonous both to the lower organisms and the human family. Given in overdoses it produces emetocatharsis, with prostration, disturbed equilibrium and certain symptoms resembling to a degree, aconite poisoning.

Staphysagria has been mainly considered as a remedy for three conditions: (1) Atonic conditions of the genito-urinary organs, with chronic discharges, imperfect evacuation of urine and similar states dependent upon an impaired tonicity; (2) certain nervous states, as evidenced by melancholia, moroseness and violent outbursts of passion; (3) various diseases of the eyes and lids, including styes and diseased states marked by blurred vision, flashes of light, and such conditions arising from a disturbance of the brain.

Its whole action is tonic or stimulant, regulating irregular or disturbed actions resulting from overstimulations and abuses. It should not be used in active ailments, but reserved for the case that is all down and out, whether it be spermatorrhea, chronic urethritis, insanity or an affection of the eye.

The disease matters not; the condition is the essential, and once diagnosed will prove curable by this remedy.

THE CURABILITY OF IDIOPATHIC EPILEPSY.

Dr. L. Pierce Clark, consulting neurologist to the Craig Colony for Epileptics, New York, has published in the *Archives of Internal Medicine* for January an account of twenty-nine cases of idiopathic epilepsy personally observed where a cure has resulted, no fits having occurred after a given number of years. As Dr. Pierce Clark's figures are in advance of those attained by any other physician, his paper deserves the attention of the profession, the *Lancet* thinks, apart from the fact that his position as a specialist in epilepsy is acknowledged by all neurological workers in America. What constitutes a cure in epilepsy is a matter as difficult to settle as the definition of idiopathic epilepsy itself. The establishment of a time-limit as a criterion is unsatisfactory, for it may vary from two to twenty years or more. Dr. Pierce Clark does not commit himself to any definite interval of years as constituting a cure, and, faced by the obvious difficulty of explaining the correct attitude to adopt to the patient's friends, when the prognosis is asked for, prefers to use the term "arrest." It is clear that no time-limit can be entirely without possible defect, for we have seen an epileptic woman who remained free from fits during the whole of her reproductive life, from the age of fourteen to the age of forty-four, an interval of no less than thirty years; but both before and after these ages she was subject to typical idiopathic fits. While, therefore, such a case can not be hailed as a cure, in the strict sense, to describe the disease as arrested is eminently justifiable. It is in the sense of "arrest" that Dr. Pierce Clark talks of "cure." No doubt spontaneous cures have been reported from time to time, but such cases are difficult of interpretation. Academic discussion of terminological questions, however, is of less importance than a consideration of the therapeutic methods adopted by the American observer. If a patient remains free of fits for years, it matters little whether one considers the disease cured or merely arrested. Some self-applied plan of hygienic treatment is of fundamental value—a broad, rational plan of living which may be pursued by the patient under occasional medical supervision. This is essentially a non-sedative method—*i. e.*, a method in which the accepted sedatives find little or no place. Most observers who have any wide experience of epilepsy will agree with Dr. Pierce Clark that many patients treated by sedatives steadily advance in physical, mental, and moral deterioration, notwithstanding a definite cessation of fits. The bromides can not be held to be curative agents; their utilization as diagnostic and therapeutic adjuvants is their only merit. There can be little doubt that true epilepsy is a cortical disorder, of which the fits are but one of the psychic incidents; we should speak, therefore, not of "epilepsy," but of "the epilepsies," as Hughlings Jackson used to do, and we should not allow the visible discharging phenomena to usurp our whole attention. The training and dietetic régime employed by Dr. Pierce Clark is of great practical value, and we may quote some sentences from his program for a typical case of the disease occurring in an otherwise healthy young man of twenty. "The patient is placed with a nurse-trainer in a congenial but quiet country environment, away from the family by preference. The patient rises at 6 a. m., and takes ten or fifteen minutes of active calisthenic exercise. He then takes a glass of hot water, a cold shower-bath and a brisk rub-down, and breakfasts on an egg, small amount of cooked cereal, a glass of milk and some stewed fruit. After breakfast he takes a walk of six to eight miles. He then takes a glass of milk, and one or two strips of zwieback. He works at some useful occupation till 12:30. He then lies down without undressing, sleeps or

not for half an hour, and is then given dinner of fish and milk, vegetables, cereals, and stewed fruit. He is then allowed to sleep for an hour. Then follows work as in the morning, then rest, reading, or study from 5 to 6 p. m. Supper of milk, eggs, cereals, and stewed fruit is given at 6:30. The patient is then allowed games, recreation, etc., until 8:30 He then takes special treatment—warm bath, general massage, etc., and is in bed for the night at 9:30. No alcohol, tobacco, tea or coffee is allowed. He is encouraged to drink at least two quarts of water daily. High colon irrigations are given every other night, and every ten days castor oil or calomel in divided doses is given. The articles of food are changed every fortnight, and the occupation too if desired." Dr. Pierce Clark says he has never known a patient not benefited more or less permanently by this plan—surely an excellent testimonial to its abiding value.

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SPORADIC TRICHINOSIS.

The *Interstate Medical Journal* quotes from a medical textbook: "An epidemic of a disease like typhoid fever following close on to a picnic should suggest an epidemic of trichinosis." The writer recalls, in the wards of a large institution where trichinosis was extremely rare, a patient lying for some time with suspected typhoid fever without the specific blood findings. A belated differential count showing an eosinophilia finally led to the correct diagnosis of trichinosis. Many cases of trichinosis are probably diagnosed as typhoid fever in the early stages, or as peripheral neuritis in the later periods,—and the mistake is made usually because the real disease is not being looked for.

As a matter of fact, the diagnosis of trichinosis is far from difficult and more cases would undoubtedly be met with were the clinical syndrome emphasized. Often epidemic in a group of persons who have been eating infected meat, it may and often does occur sporadically in an individual who does not even remember pork in his dietary. An onset much like typhoid fever with malaise, fever, slight edema of the eyelids, general or local muscle pains, a trace of albumen in the urine, and an eosinophilia, almost always spells trichina infection. The muscle pains are often not found till later, but the study of the blood showing the abscess of typhoid reactions and the presence of a large increase in the eosinophiles with the edema of the eyelids and trace of albumen make a clinical syndrome. This combination is not met with in any other infection. If this group of signs and symptoms is present, a case of sporadic trichinosis must be considered, and subsequent development of muscle pains should lead to the finding of the trichina in a piece of excised muscle. The excising of a small fibre of muscle is attended with so little discomfort that most patients do not object to the "harpooning process;" and the remainder of the technique is very simple. The small piece of muscle is teased, put on a glass slide, and examined under the low power of the microscope.

The importance of diagnosing trichina infections is not limited to the scientific value of a correct diagnosis. Realizing, as we do nowadays, that parasitic diseases are much more common than was formerly considered, every effort should be made to study their modes of infection so as to limit their incidence. In trichinosis we are dealing with a process, the details of which are accurately understood: primarily a food infection from uncooked pork, then a general blood infection, with final localization in the muscles—and it is not difficult to see that any successful combat with it must be prophylactic in nature. Whenever possible, every case should lead to a study of the source of infection, so that such a focus may be wiped out of existence.

ELECTRO-THERAPY.

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SPECIAL TECHNIQUE IN RADIOGRAPHY.

BY A. JUDSON QUIMBY, in *The Post-Graduate.*

HAVING established a time unit for the hip exposure with any given apparatus, we may refer to it simply by the letter "H."

Knee—Take antero-posterior and lateral views, center target over middle of knee at the level of the lower end of the patella. Exposure one-half "H."

Ankle—Laterally, center over the tip of the malleolus. Antero-posteriorly at the same level. Exposure one-fourth "H."

Foot—Tarsal bones, lay patient on the opposite side, elevating the knee about 9″ and centering obliquely downward, inward and forward about one inch in front of the tip of the external malleolus. Exposure one-sixth "H."

Shoulder—Turn the hand outward with elbow bent if possible. Fix well with sand bags as respiratory movements are hard to control. Center over a point 1½″ below the claviculo-acromial articulation. Exposure two-thirds "H."

Elbow—Be sure to take the antero-posterior and lateral views. Center over the tip of the external condyle. Exposure one-sixth "H."

The wrist and the hand offer the least difficulty and are frequently made the subject of experiment by beginners. Exposure one-tenth to one-sixth "H."

Head.

Nasal Sinuses—Use an old seasoned tube and a very rapid plate, not smaller than 8″x10″, press the nose and forehead firmly on the plate and fix there, as the least movement from breathing will preclude good results. Place the anode posteriorly in the median plane directing the rays along a line passing through the external auditory meatus and glabella. Exposure two "H."

Lateral View of Frontal Sinus—Center the anode above the external angular process of the frontal bone. Exposure two-thirds "H."

Mastoid Cells—Turn the ear forward place mastoid in contact with plate. Direct the rays from a point 12° backward and 12° upward from opposite external auditory meatus. Exposure about one "H."

Sphenoid—Center over a point 1½″ in front of and ¾″ above the external auditory meatus, directing the rays at right angles to the median plane. Exposure one "H."

Teeth—Cover a small plate or film with oiled silk or waterproof holder and insert in the mouth opposite teeth desired; place the tube at a suitable angle. Exposure one-sixth "H." With the recent improvements in apparatus and plates we generally prefer the opposite method of placing a small plate outside the mouth in close proximity to the region desired and with the mouth open directing the rays from the opposite side. This is almost essential in conditions affecting the superior maxilla, as it is frequently necessary to know the condition of the antrum and adjacent structures.

Ramus and Articulation of the Inferior Maxilla—Direct the rays from an angle of 15° below the articulation upward toward a point one-half the distance between the ramus and lateral processes

of the cervical vertebra. Exposure one "H."

Foreign bodies in Eye—Localization may be accomplished by several methods: taking two exposures at different angles from the same distance and plotting the position on charts. Dr. Sweet has devised an apparatus which makes this process almost automatic, but as the description of the various steps in these procedures is rather complicated we shall make the localization of foreign bodies the subject of a separate article.*

Our present methods of securing immobility of the head and at the same time selecting the exact angle from which to direct the rays admit of many improvements and ingenious operators are giving much attention to the special technic of this part with a view to greater accuracy and convenience.

If a measured distance of 18" from target to plate for all radiograms of the head is adhered to in all cases it facilitates comparison.

Spine.

Cervical Vertebra—For the first four, anterior view, place the tube eight inches from the mouth, place a cork between the teeth to hold them open, direct the rays between them. Exposure one-half "H." The balance of these vertebra may be obtained by raising the chin and exposing the same.

Dorsal Spine—Must be taken obliquely to avoid the sternum unless very high tubes are used. Very good lateral views of the dorsal spine are obtained by exposing about twice the time for the hip.

Lumbar Vertebra—Are very easily obtained providing the bowels are well cleaned out. Exposure two "H."

Thorax.

Chest; Lungs—Use a medium high tube. Take one picture with plate on the back, the tube centered over the middle of the sternum between the third and fourth costal cartilage and another picture with the patient prone centering over sixth vertebra. Exposure about one-third "H."

The thickness of the thorax is such that we get the best results from a comparatively long exposure with a hard tube such as used for abdominal organs and then under developing the plates. While this causes some "flatness" in the other structures it brings out the finest detail of the lung tissue.

Heart—To get the approximate size it should be taken from a distance of six feet. This is impossible with a small apparatus unless an intensifying screen is used. It may be taken at half that distance and correction made for the resulting distortion.

Abdomen.

When X-ray examinations are to be made of the abdominal region, the bowels must be thoroughly cleaned out. Fecal contents obscure important structures and may be mistaken for kidney stones, etc.

Kidneys—Both may be taken at once, but it is better to use a compression cylinder and obtain each kidney on a separate plate. With the patient in the supine position, place the center of the cylinder three to four inches from the median line just below the twelfth rib. Have the patient bend the knees, incline the cylinder slightly upward. While exposing let patient suspend respiration. Expose three-fourths "H."

Ureters and Bladder—Two methods may be mentioned: (1) Center the tube over the sacro-iliac joint for the upper part of the ureters, direct the rays at right angles to the body, the knees flexed and compression applied to the groin. (2) Below the joint, raise the patient to a reclining posture at an angle of 45°, place the plate under the perineum and direct the rays downward and backward, so that they enter the inlet of the pelvis

*As extreme accuracy is attainable and greatly facilitates the immediate removal of foreign bodies from the eye we deem it inadvisable to attempt their localization without modern appliances and a thorough knowledge of the methods employed.

at right angles to its plane. This exposure will include the bladder and enable us to get nearly all the ureters below the brim of the pelvis. Expose one "H." Phleboliths and sesamoid bones may mislead in a diagnosis here, but can be differentiated from stones in the ureter by the following method: Use a tunnel plate changer, place a wire netting three-quarter inch mesh under the patient, fix firmly so no movement can occur. Place a plate in the holder. Have an assistant sit on the opposite side from the suspected stone and insert his index finger in the rectum pointing it toward the stone. Expose for this picture, insert another plate; then while keeping the patient perfectly quiet pull on the prostate to the opposite side; this displaces the shadow downward and inward if it is in the ureter, otherwise it remains stationary. A comparison of the relation of the shadows with regards to the wire on the two plates will clearly demonstrate displacement of the stone.

The position of the ureter may be determined by passing a catheter either impregnated with metal or containing a stylet; or by a continuous injection of argyrol during exposure. These methods are of use in determining the position of kidneys and stricture of stone in ureter and the condition of renal pelvis. An outline of sinus or fistulous tract in any region may be made by injecting Beck's bismuth paste and radiographing with this substance *in situ*. Sterograms are indicated as especially valuable in such cases.

Stomach—Give 2½ ounces of bismuth subcarbonate or oxychloride suspended in buttermilk, kumiss, thick soup or fruit juice and bread crumbs. Take the picture with the patient sitting or standing. Place the plate on the abdomen after having fastened a small coin on the umbilicus with adhesive plaster, the tube being centered on a point previously determined while locating the stomach by means of the fluoroscope in a dark room. The stomach may sometimes be found as low down as the symphysis pubis. The exposure should not be longer than three seconds in order to get the peristaltic outline. Corpulent persons require the use of an intensifying screen which reduces the exposure somewhat. If the fluoroscope is not used a plate not smaller than 11"x14" should be employed.

Bowels—The upper end of the jejunum can sometimes be outlined, but not often. Should the appendix be patulous it may cast a shadow. Use a large plate for both front and back view. As intestinal peristalsis is slow, about three seconds' exposure may be given.

We would suggest that as a mark is frequently a convenience in determining the relative position of the stomach or other organs it would also be a further aid in identifying plates at first glance if a fixed rule were adopted such as placing a small coin on the umbilicus in all cases in which the plate is placed on the abdomen and a marker of some other shape under other circumstances.

Pelvis—Place the patient in a reclining position with the brim of the pelvis parallel with the plate which is placed in contact with the perineum. Center the tube in the median line, and as near over the center of the superior plane of the pelvis as the tissues will permit, with the target about twenty-two inches from the plate. Record the distance from superior border of pubes to plate and from target to plate and by a simple method of triangulation, the various measurements of the pelvis may be calculated from the developed plate. The author's method of determining these measurements will be taken up under "Interpretation of plates."

Diaphragm and Liver—The great density of the liver renders the study of this region very difficult. The upper border of the diaphragm and amount of movement may be readily noted by an exposure of one and a half "H" with the patient in the recumbent position. The

normal descent of the diaphragm on inspiration, which is approximately 2 cm., is readily noted and should be borne in mind in studying lung lesions, sulphrenic abscess and pleural adhesions. (Williams' sign). In examining suspected cases of cirrhosis of the liver, gall-stone, etc., lay the patient prone on the table with the plate under the liver, raise the shoulders and hips, as in opisthotonos, fix firmly and expose two "H" with a high tube, centered about twelve inches above the tip of the right twelfth rib.

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THE ROENTGEN RAYS IN HYPERTROPHIED PROSTATE.

To present new features on the subject of prostatic hypertrophy, says the *Lancet-Clinic*, is indeed a difficult task. A little investigation will soon convince us that every feature of the disease has been well discussed in the past. Therefore, in dealing with the subject of hypertrophy of the prostate, we are compelled, more or less, to tread in former well-beaten paths, with the hope of finding certain features that have either escaped attention or have not received sufficient consideration. It is from the latter point of view that the reviewer desires to discuss the subject on this occasion.

The treatment of hypertrophy of the prostate is divided into palliative and operative. Each has its indications and limitations. Not infrequently it requires good judgment which course to pursue in a certain given case.

The treatment of hypertrophy of the prostate by non-surgical means, should always be worthy of serious consideration. As physicians, not infrequently do we meet patients who are prejudiced against operative procedures, in spite of indications present. Such patients usually tax the attending physician's medical resources to the utmost. They will submit to every conceivable procedure, so long as it is free from cutting.

The usual non-surgical methods of dealing with enlarged prostate are well known, and therefore need no recapitulation at the present. On this occasion the reviewer desires to call attention to the observations of J. W. Hunter, Jr., (*Am. Jour. Med. Sciences*, Feb., 1912) in the treatment of hypertrophy of the prostate by means of the Roentgen rays. He compares the treatment of hypertrophied prostate by means of the X-rays as analogous to that in exophthalmic goitre.

It is largely a question of the histological structure of the gland. In cases where the hypertrophy is young and the hyperplasia due to increase of epithelial and glandular tissue, brilliant results may be expected. If, instead, the increase has been in the muscular or fibrous tissue of the prostate, the results will not be satisfactory. Muscular and fibrous tissue will, of course, not shrink as much as epithelial or glandular tissue. This same procedure may be utilized in cases where prostatic massage is considered. Hunter found irradiation of scrotum and testicles of value, in conjunction with the application of the rays to the prostate gland. In doing so, he claims that the patient feels greatly relieved and the testicles return to the normal size. The danger of sterility is not considered. In fact, it is hardly worth while, as most men suffering with prostatic hypertrophy have passed the procreative period. Instead of seeking heirs, they are looking for comfort and relief from their sufferings.

The treatment of prostatic hypertrophy by means of the Roentgen rays is not new, nor does Hunter claim it as an original method. Robarts, of St. Louis, in 1902, reported the use of the X-rays in hypertrophy of the prostate gland. Robarts' cases showed considerable improvement after several applications of the rays.

In the course of time, reports from other sources appeared attesting to the value of the Roentgen rays in the treatment of enlarged prostate. For some

reason or other the methods fell into oblivion. It may be stated that the treatment of hypertrophy of the prostate by means of the X-rays is not the only therapeutic measure that has been cast aside in dealing with the enlarged gland.

Vasectomy, castration, etc., popular procedures at one time, have likewise been discarded. In fact, with "the advent of accuracy of diagnosis, prognosis and the perfection of technique of the radical operation, no other results could be expected. Vasectomy, castration, etc., were only indirect means of attacking the gland, and therefore could not survive in the face of the excellent results obtained when direct measures were adopted in dealing with the hypertrophied prostate. In view of the beneficial results obtained by Hunter in the treatment of certain types of hypertrophy of the prostate by means of the X-rays, it seems that it would be advisable to give the method some consideration. Should the procedure prove unsuccessful nothing is lost thereby, as the patient is not subjected to any operative risks. The time required to administer the course of treatment is of short duration. Therefore, if failure should result, the loss of time consumed in the administration of the X-rays, under ordinary circumstances, would not influence future operative results.

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THE X-RAY TREATMENT OF LEUKEMIA.

By Geo. F. Thomas, M. D., Cleveland.
(In the *Cleveland Medical Journal.*)

The beneficial effects of X-ray treatment upon the clinical and pathological manifestations of leukemia have been frequently demonstrated during the past decade, and in some instances were remarkable enough to lead some of the earlier observers to report their cases as cured. The rapid restoration of practically normal blood-cell ratios, the disappearance of the enlarged spleen and other distressing physical conditions, and the brilliant recovery of strength and health seemed to justify the announcement that exposure to the X-ray was a specific cure for leukemia.

Subsequent observations dispelled this belief. The apparent cures were not permanent. After variable periods of comparative health, the patients suffered recurrences and died. At the same time other observers were reporting their experiences. In some cases the X-ray had no effect at all. In others the effect was deleterious and, finally, in others the exposure produced sudden collapse and death from severe toxemia.

Considering the fact that nothing is known regarding the causative factors of leukemia, and that the nature of the pathological changes is still only a matter of theory, it is not surprising that a therapeutic agent so little understood as the Roentgen ray should have produced such different results. Until the nature of these various causes and effects is more thoroughly understood, we can not hope to secure permanent cures.

At present the most plausible theory is that the exciting factor of leukemia is some agent that stimulates the bone marrow to prolific production of abnormal cells. On this basis the beneficial effect of the X-ray may be a direct inhibition of this exciting factor; or an indirect inhibition through stimulation of the natural mechanisms of resistance; or, finally, a direct action upon the products of the disease, *i. e.*, destruction of the abnormal blood cells. The data so far obtained upon this question suggest that the X-ray produces results by a combination of these actions. First, because the exposure of the spleen produces a marked reduction of the blood count, with evidence of severe toxemia if the dosage is too large. Secondly, because the blood of the patient thus Roentgenized contains bodies that can produce a similar reaction when introduced into the circulation of other leukemic patients. Thirdly, because the exposure of the bone-marrow alone will produce a more

lasting effect than exposures confined to the spleen.

The method of treatment most generally used is that suggested by Pancoast. It is based on the conception that leukemia is primarily a disease of the bone-marrow and that the lymphatic involvements are secondary. Accordingly, the treatment is directed chiefly to the bone-marrow, each part of the skeleton receiving in turn a series of exposures. The secondary involvements are treated later, when the blood picture and the patient's general health are more nearly normal. The results so far secured indicate that this method is less apt to cause a fatal toxemia and that the improvement is more marked and more permanent than that produced by confining the exposures to the lymphatic involvements.

During the past five years I have had opportunity to observe the results of X-ray treatment in six cases of leukemia of the splenomyelogenous type. Four of these patients followed the usual habit of discontinuing treatment as soon as the beneficial effect of the X-ray made them feel perfectly well and enabled them to resume their usual pursuits. The only facts of importance taught by their cases are: That under proper dosage almost hopeless cases will respond rapidly to treatment; that this improvement is marked enough to cause the patients to feel that they are practically cured; that after cessation of treatment the disease recurs; and finally, that these recurrences are also amenable to treatment, though the response is successively less satisfactory.

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CANCER AND THE X-RAY.

Mulford K. Fisher, in the *Medical Council,* reminds us that it is only in carcinoma of the superficial regions, such as the exposed mucous membranes or the mammary glands, that we can expect the disease to be held in check by this therapeutic procedure. In visceral carcinoma, aside from the anodyne effects of the rays (and it is ofttimes remarkable the relief that can be afforded in advanced cases by an occasional exposure), the Roentgen rays are absolutely useless as a curative measure. However, in carcinoma of the breast, after radical operation, there is no doubt that the results secured in preventing a return of the growth are sufficiently good to point to its employment as a routine procedure two or three times a week for from several months to two years after operation.

In sarcoma, the indications for the employment of the X-rays are practically the same as in carcinoma, *i. e.,* as a routine procedure after operation. In the large round-cell and spindle-cell form of this disease, the results secured are almost uniformly good, but in the rapidly growing small-cell sarcoma little or no benefit can be expected. In conjunction with the Roentgen therapy, it is advisable to give injections of Coley's fluid.

Tubercular adenitis offers another field in which we are able to afford promising results from the use of the X-ray. The enlarged glands soften and melt down speedily under the action of the rays and the cosmetic results are decidedly good, there being no resulting scar, providing, of course, that there is no previous sinus formation present. This is particularly desirable in adenitis of the cervical region, especially in young girls, where the ugly and unsightly scars, and frequently the tendency to the formation of keloids after operation, makes surgical intervention rather undesirable.

In goitre, the results from roetngenization are somewhat uncertain, but occasionally it causes a diminution in the size of the gland, and the author reports two cases in his own experience where the improvement in the cardiac symptoms and the exophthalmos was marked and permanent. Both these cases have

been under observation for over two years.

In spleno-medullary leukemia, X-ray exposures over the spleen and the epiphyses of the long bones, cause a decrease in the splenic enlargement and an improved blood picture, the disease being to some extent arrested, but, as to an ultimate cure, there is little hope to be offered, either by this or by any other form of treatment.

Some observers have been able to report good results in the treatment of chronic arthritic conditions, especially in rheumatoidal arthritis, by frequently exposing the affected regions to the influence of the X-rays. The author's experience, in this class of disorders, although somewhat limited, has been decidedly unfortunate, although the failure to afford benefit in a few cases is not sufficient basis upon which to found wholesale condemnation of the procedure as a therapeutic adjunct in a particularly obstinate and rebellious condition.

There has been no attempt in this paper to do more than present a résumé of medical and surgical conditions in which roentgenology has proven of service. The literature of this science is voluminous, and may tempt one to discuss debatable issues, or, on the other hand, to become dogmatic, which would be at variance with the real purpose of this paper.

With the advances made in the modern apparatus used for skiagraphy and Roentgen therapy, with the increased skill and perfected technique of the radiographer, and with the proper safeguards for both patient and operator, which sad experiences of the past have taught are necessary to shield them from the deleterious effects of the X-rays, there has come to the medical profession practically a new science and specialty which is advancing rapidly to the forefront as an almost indispensable aid in diagnosis, and a most valuable adjunct as a therapeutic agent in many obstinate and rebellious diseases.

IONIZATION IN RINGWORM.

Riddell, in the *Glasgow Medical Journal,* condemns the use of X-rays. As a substitute, ionic medication by antiseptics is advocated. By this means the drug is carried right into the hair roots, and thus destroys the vitality of the spores *in situ.* The procedure is to shave the head, or cut the hair very closely all over, and rub a solution of the drug to be used well into the affected parts. Then ten to sixteen folds of lint, soaked in the solution, are applied to overlap the areas; the lint is secured by an electrode made of a substance capable of being moulded into shape, and fixed at even pressure over the site. The other electrode is connected to a water-bath, in which is placed the arm or leg of the patient. A battery of twenty or thirty cells is sufficient. The current is turned on slowly, and gradually increased as much as possible without causing discomfort to the patient. Each sitting is of forty or fifty minutes' duration, and nine or ten sittings are sufficient for cure. Mercuric chloride solution of 1% strength is used, or a 1% aqueous solution of iodine with potassium iodide. The treatment is repeated two or three times a week. Certainty, rapidity, and safety are claimed for the treatment.

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IONIZATION OF DRUGS IN RHEUMATISM.

In an article by J. Lewes Timmins, in the *Practitioner,* the technique is fully described; the apparatus used is a constant-current battery capable of giving a current of 80 to 100 milliamperes, and fitted with a galvanometer with readings, $^1/_{10}$ and $^1/_{100}$. The correct pole for the drug used must be connected to the active electrode. In choosing the pole it must be remembered that the ions of the metals travel from the positive to the negative pole, and those of the acid radicles, bases, and halogens travel from the negative to the positive pole. The writer has found the following current strengths and time of application to be

most convenient: *Iodine*—15 to 40 milliamperage for ten to twenty minutes, according to the size of the electrodes used. The solution of the drug is obtained by making a 2% solution of potassium iodide and adding about 30 drops of liniment of iodine to 1 pint. *Sodium salicylate*—30 to 60 milliamperes, according to the size of electrode, for twenty minutes. *Sodium chloride*—40 to 80 milliamperes for twenty to thirty minutes. The sitting should be given for iodine at a not shorter interval than once weekly; when the skin reaction has been great, ten days may be allowed. For sodium salicylate and sodium chloride five to six days' interval will be sufficient. One to six applications of iodine will generally suffice, a few more for the salicylate, one to many of the sodium chloride. Abrasions must be protected by a piece of batiste stuck on with soft paraffin. The strength of the drug solution may be 2%, and the pads should be soaked so that some liquid is squeezed out when bandaging.

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THE PULMOTOR.

So much interest has been aroused by the press accounts of this new apparatus for performing artificial respiration and forcing a supply of oxygen into the lungs that we are glad to publish the following description from the *American Jour. of Clin. Med.:*

The pulmotor which the Commonwealth Edison Company has so far sent out is about the size of a large suit-case. In the lower portion of the case is an iron cylinder, 3½ by 21 inches, containing oxygen at a presure of about 2800 pounds when completely filled. This life-sustaining gas also furnishes the energy which is required to induce breathing in the following manner:

The oxygen from the tank flows through a reducing valve, which at the outlet side maintains a pressure of about seventy-five pounds, and from there to the controlling valve. Initially the passage to the lungs is open through this controlling valve. The latter connects with rubber tubes leading to a metallic face-cap with a rubber rim which closely fits the patient's face. This face-cap on one side is provided with a rubber bag, which permits a pair of forceps to protrude, by means of which the patient's tongue is held from obstructing the pharynx. The oxygen then has free access to the lungs.

When the pressure in the lungs has reached a certain value (about normal), a bellows interconnected with the lung cavity through the rubber tubes actuates the controlling valve. The pressure of the oxygen is now directed so as to create a suction over the connections which lead to the lungs, thereby causing exhalation of the gases previously forced into the lungs. When a certain vacuum is reached in the lungs and bellows, the outer atmosphere acts on the latter, which in turn operates the controlling valve and again admits the oxygen to the lungs.

The frequency of these reversals depends upon the size of the lung cavity, a larger space requiring greater time, while with smaller lung cavities the operation is correspondingly more frequent.

This process is continued until the patient shows signs of natural respiration. The pulmotor action is then discontinued and the patient is allowed to breathe the pure oxygen through another small face-cap connected by a hose directly with the oxygen-tank.

Several patients can be treated at once. An extra tank of oxygen is carried in nearly all calls. This enables the operator to treat two persons at the same time, using the pulmotor on one and giving the other person oxygen from the oxygen bag. The majority of calls have been for more than one person—in severals cases for four persons. In the latter cases it was possible to treat them all at practically the same time by having the patients close together and transferring the pulmotor and oxygen-tube from one to the other.

BOOK REVIEWS.

HOME HYGIENE AND PREVENTION OF DISEASE. By Norman E. Ditman, M. D. New York: Duffield & Company, 1912.

The sphere of the doctor and his relations with his clientele have greatly enlarged during the past twenty years. He is no longer merely the official feeler of pulses and prescriber of drugs in time of actual sickness, but the family adviser in matters of household hygiene and the public promulgator of municipal and national sanitation. And, because he cannot be on the spot all the time, nor can he, for lack of time and opportunity, instruct in every detail, it becomes a part of his duty, under his new régime, to recommend books upon the subject for his clients. This is one of the books which he ought to recommend. A book thus recommended by the family physician carries great weight and exercises great influence in the home—far more than one which is picked at random by the laymen himself. No physician need hesitate to endorse Dr. Ditman's little manual. It is in every respect an excellent manual of education and instruction in family and personal hygiene for home use.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I; Number 1. Octavo of 133 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, $8.00; Cloth, $12.00.

This, the first number of the "Surgical Clinics of John B. Murphy, M. D.," represents a new departure in medical publishing. It is a departure, however, that must appeal at once to the medical man, because it is extremely practical *clinical* teaching. These are not students' clinics but Dr. Murphy's famous clinical talks at Mercy Hospital, Chicago, for physicians only. A point worth observing is that these "Clinics" are published just as delivered by Dr. Murphy, being reported verbatim by an expert medical stenographer. In this way they retain all that individual force and charm so characteristic of the clinical teaching of this distinguished surgeon. These "Clinics" are being issued in serial form, one number every other month (six numbers a year). Each number is to contain about 130 octavo pages, illustrated. The price (sold only by the year) has been fixed at $8.00 in paper binding, $12.00 in cloth.

FOOD FOR THE INVALID AND THE CONVALESCENT. By Winifred Stuart Gibbs, Dietitian for the New York Association for Improving the Condition of the Poor; Teacher of Economic Cooking, Teachers' College, Columbia University. New York: The Macmillan Company, 1912. Price 75 cents.

Rather strange to relate, neither the book nor the magazine market is overcrowded with authoritative writings on the practical side of the dietetic question. There are one or two good works on the underlying principles of dietetics, and a few very fair manuals of practical feeding in health and disease; but there is ample room for all that exist, and more too. The last word has not by any means been said on this subject, and it is highly probable it never will be said, since the state of our knowledge of dietetics is just as movable and progressive as that of our knowledge of the various branches of medicine. Miss Gibbs has produced a very worthy contribution to the working literature of dietetics, which deserves, and will doubtless win for itself, a recognized place in the armamentaria of the physician and the nurse. It observes the most modern conception of food values, while at the same time giving proper attention to the patient's side of the matter.

A MANUAL OF PRACTICE OF MEDICINE. By A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Ninth edition, revised. 12mo of 573 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, $2.50 net.

We have more than once expressed the opinion that in these days, when the extent of the range covered by medical science compels its division into well-defined sections, each of them large enough in itself to contribute a separate science, the old-time "textbook of medicine" has no longer a place. From an exhaustive standpoint, each branch of medicine must be treated in a separate textbook; from a compendium standpoint, the best that can be done to present an exceedingly epitomized summary of the barest clinical essentials of general medical practice. It is this condition of affairs, no doubt, which has of late given such a wide currency to books of the type now under review. In its class Stevens' Manual has always held an enviable place, and with good reason. It is succinct and meaty. It contains the sublimated, boiled down, quintessence of all that is practical in modern theory and practice. And the revision embodied in the ninth edition shows that the author is alert to all the progress that is being made from day to day in every department of medicine.

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A SURGICAL TREATMENT OF LOCOMOTOR ATAXIA. By L. N. Denslow, M. D., Fellow of the New York Academy of Medicine; Late Physician, Diseases of the Skin, Bellevue Hospital; Late Professor of Genito-Urinary Surgery and Venereal Diseases, St. Paul Medical College, Minn. London: Bailliere, Tindall & Cox, 1912.

We are not aware that Dr. Denslow's theories of locomotor ataxia have ever received any serious endorsement, or even attention, at the hands of the profession. We must confess to considerable hesitation in subscribing to them ourselves. They are so very startling, and so altogether at variance with what we regard as settled knowledge on the subject. And yet, if the records that Dr. Denslow gives us in this book are true and accurate—and he has the reputation of being a sincere and trustworthy man—they certainly constitute a group of facts which, to say the least, merit earnest attention. It does not even dispose of the matter to indulge in the far-fetched supposition that the cases reported by the author were not genuine cases of tabes; for that only serves to open up a proposition that many cases of alleged tabes are in reality urethral conditions such as he describes, and that is a consideration in itself of immense importance. At all events, we commend Dr. Denslow's book to the thoughtful, even though tentative, perusal of our readers, for what it is worth. *Audi alteram partem.*

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SEX HYGIENE FOR THE MALE. What to Say to the Boy. By G. Frank Lydston, M. D., Professor of Surgical Diseases of the Genito-Urinary Organs and Syphilology, Medical Department of Illinois State University; Author of "Diseases of Society," etc.; Delegate from the U. S. Government to the Congress for the Prevention of Infectious Diseases, Brussels. Illustrated with 24 engravings. Chicago: The Riverton Press, 1912.

Dr. Lydston, with his usual vigorous and trenchant pen, and his brusque outspoken fashion of calling a spade a spade, has given us a very manly and straightforward book on this rather difficult subject. With his customary good sense, he avoids both the extremes into which writers on this topic usually fall. He displays neither the offensive vulgarity nor the namby-pamby niceness that characterizes most of the books on sex questions, but presents, in plain, manly language, the common sense of science and experience, so that he who runs may read. It is just the kind of stuff that an earnest, fearless man would talk even to a mixed audience without the slightest danger of giving offense and at the same

time sending everyone home with a sense of having had the truth driven home. Amid the mass of rather sickening wish-wash that it has been our misfortune to have thrust upon us of late on this subject, Dr. Lydston's book came to us with a wholesome and refreshing breath of clean, cold air. As Bret Harte said of the mountain wind, "it makes us shiver, but it brings us health."

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TREATMENT OF TYPHOID FEVER.

Leopold Heimann, in the *Lancet-Clinic*, asserts that the treatment of typhoid resolves itself into two essential components: Rest and diet. Nursing is the *prima factorum*. Very few drugs are of any consequence. Salol or any of the various intestinal antiseptics are of varied importance. Quinine may or may not aid in reducing the temperature. Any of the so-called coal-tar antipyretics are dangerous to use at any stage. Turpentine in the form of emulsion may be given in small doses, which relieves the distension to a great degree, thus lessening the danger of hemorrhage and perforation. Hot turpentine stupes can be used where turpentine used internally is not readily borne by the patient. Whenever the temperature is over 102° F. an ice sponge bath must be used, or ice packs, or ice baths. This is primarily essential and must be repeated as often as necessary to keep the temperature within this bound. The great immediate danger in typhoid is from the extremely high temperature, which, if not reduced, soon causes a cardiac paralysis and death, and this can only be relieved by ice bathing in some form.

Hemorrhage, which is only indicated by an increasingly rapid pulse rate, is best met by ice applied to abdomen and the careful administration of morphine in large doses. Gelatin and adrenalin are also advocated by some with varied results.

Perforation is usually recognized by the acute pain and the sudden dropping of temperature and acceleration of pulse rate and the general condition of the patient. This is purely a surgical condition and, when recognized, must be treated by heroic surgical measures.

Diet is a great essential in successful management of a typhoid case. No sweet milk should be given. Peptonized milk or buttermilk, two ounces every two hours, answers admirably and can be alternated with beef tea extracts or strained soups. Albumen water or carbonated water is readily borne and can be moderately given, and lemon or orange ice, carefully strained, are suitable and grateful to the patient. Competent nursing is the great essential feature in treating a case of typhoid fever.

Prophylaxis in typhoid is very essential. All excreta must be disinfected—burning, where possible, is the best. Chlorinated lime, carbolic acid, not weaker than 1-20, are the best disinfectants. This should be applied to bowel and urinary movements and all vomited matter. All water and milk must be boiled. The source of the infection must be found and thoroughly disinfected. Of late, an emulsion of the suspended typhoid bacilli are given, both as a preventive and a curative measure. The results as yet are purely hypothetical, but should they be proven effective a great boon will be added to our defense which will help to eradicate typhoid or minimize its dangers, as have the serums in tetanus and diphtheria.

A typhoid serum is now on the market and can be administered during the course of the disease with varying success, due no doubt to unknown quantities. Immunizing doses of this serum will often abort an attack when given under special rules. This is now getting severe tests in army and navy hospitals. If all that is prophesied of this serum eventuates a new and very great weapon is placed in our hands, which will not only help to cure but will eventually eradicate the great dangers of this disease and prove a great boon to suffering mankind.

NOTES AND MISCELLANY.

THE HOSPITAL FOR NERVOUS DISEASES.

IT will be of interest to the readers of this journal to know that a large modern hospital, of about fifty rooms, solely for nervous diseases, is being opened in Atlanta. The building is located two blocks from the car line, overlooking the most attractive part of Grant Park, and is ideally situated for the care of nervous invalids.

This sanitarium is called "The Hospital for Nervous Diseases," and has the following well-known Atlanta physicians upon its staff: Dr. Hansell Crenshaw, medical director; Dr. C. W. Strickler, internal medicine; Dr. F. K. Boland, surgery; Dr. J. E. Paullin, pathology; Dr. G. M. Niles, gastro-enterology; Drs. Campbell and Ridgley, laryngology and rhinology; Dr. Park Howell, opthalmalogy; Dr. Bernard Wolff, dermatology; Dr. Edgar Ballenger, andrology; Dr. C. R. Andrews, orthopedics; Dr. W. F. Shallenberger and Dr. Annie L. Sawyer, gynecology.

FUNCTIONAL HEART DISEASE.

It has long been known that Cactina Pillets are especially serviceable in all functional disorders of the heart, as well as in certain phases of the common organic lesions.

They are safe, reliable and do not manifest a cumulative action. Associated with digitalis, Cactina Pillets act as a valuable synergist, making possible use of much smaller doses of digitalis in the production of desired effects.

As has been previously said, Cactina Pillets improve cardiac nutrition. Under its use the heart's action is slowed and materially strengthened. No miraculous claims have ever been made for Cactina Pillets, but in suitable cases clinical experience has repeatedly demonstrated its extraordinary value as a persuasive tonic.

THE THERAPEUTICS OF RACHITIS.

Among remedial agents promising benefit in rachitis, codliver oil, as exhibited in Cord. Ext. Ol. Morrhuae Comp. (Hagee) is worthy of prominent mention. It not only has abundant value as a tissue nutrient, but its contained phosphorus makes it particularly potent in this condition. There is an urgent indication for this latter agent, which is admirably met by the administration of Cordial of the Extract of Cod Liver Oil Compound (Hagee).

PLASMODIAL ANEMIA.

In spite of the modern theory of the etiology of malaria and malarial affections (mosquito-born infection) this plasmodial disease continues to be rife in certain sections of the country and bids fair to be, like "the poor," "always with us."

Every physician of experience appreciates the principles which should guide him in the treatment of the various acute manifestations of paludal poisoning, i. e., the destruction of the plasmodial hosts which have invaded the blood and which, if not eliminated, consume and destroy the red cells, the vital element of the circulating fluid.

When this purpose has once been accomplished the patient is but partly cured; the damage done to the red corpuscles must be repaired and the vitality of the blood restored, if reinfection is to be avoided. If there is any one condition in which direct hematinic or blood-building therapy is positively indicated, it is in post-malarial anemia. As soon as febrile period has passed, iron, in some form, should be given in full dosage. Pepto-Mangan (Gude) constitutes the ideal method of administering this essential blood-building agent in this as well as in any anemic condition. Both the

iron and manganese in Pepto-Mangan are in organic combination with peptones and are therefore easily and promptly absorbed and assimilated without causing digestive derangement or producing constipation.

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RESULTS COUNT.

NO MYSTERY IN THOSE OBTAINED FROM THE USE OF BANNER'MAN'S INTRAVENOUS SOLUTION.

The great value of any remedy comes from its actual capacity to do what it is expected to do. No one can discount the infinite satisfaction that is derived from administering a remedy and watching it accomplish just the effect on the physiologic economy that was hoped for and desired. In other words, dependable physiologic action is the great desideratum in connection with any therapeutic measure, and when a physician finds a drug or remedial preparation that he can rely upon to do what he sets it to work to do, he should pin his faith to it with all the steadfastness of his character. Bannerman's Intravenous Solution is one of these dependable remedies, and when a physician becomes familiar with its properties and action it is sometimes startling to note how one can predict from day to day its exact effects—for instance, on the blood cells—and have these predictions work out with almost mathematical precision.

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THE EFFECTIVE TREATMENT OF CONSTIPATION.

Gradually the profession are beginning to realize that Prunoids offer the ideal treatment for all forms of constipation traceable to functional causes.

They produce their results by stimulating normal secretions, rapidly increasing the fluid content of the feces and gently increasing peristalsis. They are extremely palatable, easily taken by even young children, and when brought in contact with the secretions rapidly disintegrate and produce their specific effect.

Probably the most gratifying feature of Prunoids is what, for lack of a better term, may be called their remote effect. While prompt and decided catharsis follows their administration in six or eight hours, a mild and salutary laxative influence is observed several days after the final dose of Prunoids. Other cathartic measures act just the reverse, and after their use the bowels invariably show greater lethargy and sluggishness.

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HYGIENIC OSCULATION.

[According to advices from New York, a demonstration of the "hygienic kiss" will be given this month at the ball of the National Pharmaceutical Society. Each lady will receive as a souvenir a screened ring fastened to a silver handle like a lorgnette. With the aid of this osculation will be perfectly harmless.]

When the world is drab and dreary,
And with *ennui* a-weary,
And it seems as if there was no more to do, or see, or say.
With a vision frenzied, frantic,
We gaze o'er the broad Atlantic,
And beseech a new sensation from the boundless U. S. A.

Never vain is our beseeching,
So our cousins, upward reaching
From this arid Earth to Heaven, change the Amatory Code;
Now no lovers' muss and muddle,
For they've sterilized the cuddle,
And th' inoculated waist-clasp is the very latest mode.

Though promiscuous osculation
Be the mental aberration
Of a cult insanitary, dooming precious lives to waste,
Yet there's something sadly missing
In this hygienic kissing;
It, of course, is very healthy—but we'd rather have the taste.

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MORPHINISM.

Bartlett's monograph on "Morphinism, Its Rational Treatment and the Mental Attitude of the Medical Profession in Relation to this Disease." Just off the press, and will be sent free to practicing physicians. Address C. H. Bartlett, 612 Princess Building, St. Louis, Mo.

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THE PREVENTION OF DYSMENORRHEA.

By L. G. Boyd, M. D.

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ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG. PUBLISHER T. G. ATKINSON, M. D., EDITOR

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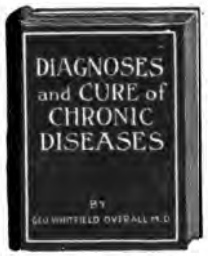

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The Medical Brief

A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., July, 1912. No. 7.

EDITORIALS.

WHY IS MEDICAL ADVERTISING TABOOED?

DOUBTLESS every young medical practitioner—and possibly many an older man in practice, too—has, at some time in his life, looked the bogy of medical advertising in the face, and wondered if it were not, after all, merely a specter of worn-out tradition, which needed only to be boldly defied to vanish harmlessly from the earth forever. Some, indeed, have even gone further, and suggested that it was a subsidized bogy, deliberately invoked by the older and more successful men in the profession, who get all the advertising they want without seeking it, to insure that the younger and more vigorous blood shall not compete with them on their own ground. These, however, we may assume to be in the minority. The majority of medical men, whether they be young or old in the profession, regard the prohibition of advertising as being, somehow, an accepted item in the medical code, to which all subscribe and conform with more or less fidelity; but they are frequently disposed to question, very seriously, whether it is not the senseless figment of a too fantastic sentiment, out of date in these days of practical shrewdness and sharp competition. And even the public is often inclined to look upon it as a quixotic fetish of tradition—a custom which would be more honored in the breach than in the observance.

Why should not the medical man advertise? He looks abroad and sees the merchant and purveyor of every imaginable commodity advertising his goods, and bringing customers to his doors upon whose custom he waxes rich. He has it dinned into his ears on every side that publicity is the life of business, and his own common sense tells him that it is a sound axiom. He has a commodity for sale—an honest commodity, of far more value to the public than any which these others offer—a commodity for which there is a genuine demand, if he could only connect with that demand, and in which the competition is becoming every whit as sharp, in every respect, as that which prevails in other commodities. Even granting, as he is willing to grant, that the doctor's service is not an ordinary kind of commodity, and that his relations with the public do not constitute a business, in the ordinary sense of the term, yet in these aspects, at least, it does not differ, that his skill is for sale, that it is a proper article of exchange for economic currency, that there is a legitimate competition in it, and that the public stands in more or less constant need of it.

What, then, is the objection to advertising the physician's commodity, except it lie in a mere traditional sentiment? No reputable medical man, of course, wishes to emulate the quack. But surely there is no *necessary* connection between the

advertising that the quack does and the charlatanry that he practices. Advertising has to do only with making known one's readiness to serve, and with attracting those who desire one's goods or service. It is quite possible to give these people honest goods and genuine service after they have thus been attracted. Honest business men advertise; they aver, and rightly, that they could not do business without. Why not the doctor?

There are, as we understand it, two fundamental considerations which make the medical aspect of advertising quite different from that of business, and which render the prohibition of medical advertising not simply a professional sentiment or tradition, but a sound requirement of public policy—considerations which are too often overlooked and too seldom pointed out in discussing the subject. First of these is the fact, known to the merest tyro in the science of advertising, that advertisement does not consist merely in making known to the public the advertiser's readiness and equipment to serve its needs. Such a principle and plan of advertising would hardly pay for the printer's ink expended on it. Its real object, if it is to be worth its expense, is to create, or at least to stir up, a demand for the commodities advertised. Such a purpose is perfectly legitimate in the ordinary necessities and luxuries of life; at all events he would split very fine hairs who would undertake to dispute its legitimacy in such matters. But in respect of medical service it is easy to see that such a process would be absolutely immoral and opposed to public policy.

The second consideration grows out of the first. If the purpose of advertising be to create a demand for one's commodities, and to profit by that demand in the face of competition, it is certain that the means employed in such advertising must transcend the mere bald statement of what the advertiser has for sale. The most moderate and conservative exponent of business would smile at such a simple conception of advertising as that. If the advertiser is to command any attention at all, and to reap any benefits from his advertising, he must "cry his wares;" that is to say, he must, in some fashion, set forth the superiority of his wares over those of his competitor. It is by this means, and this alone, that he can create a demand, not for those wares in general, but for his wares in particular. All of which, again, is perfectly legitimate in ordinary lines of business, or, at least, is productive of no special injury to the welfare of the public. In medicine, on the contrary, such a course would speedily result in a disastrous demoralization of the profession, and, what is more to the point, in an equally disastrous confusion to the public.

These, then, are the fundamental considerations upon which the prohibition of medical advertising is based, which we here set forth for the information and guidance of such of our readers as have not before had them brought to their attention. They are, we think, sufficiently basic considerations to settle forever (unless society shall undergo some very radical change of constitution) the vexed question of medical advertising.

* * *

BUSINESS IN MEDICINE.

THERE is a wide-spread movement in certain quarters for the promotion of what is called the "business side of medicine." In so far as this propaganda has for its aim the inculcation of business habits in the practitioner in regard to the conduct of his own affairs—the keeping of his records, the collection of his accounts, etc.—we have no criticism to make of it except to express a somewhat skeptical opinion of its efficacy. We are of opinion that the time to make a

good business man, as Oliver Wendell Holmes said of a healthy child, is to begin with his grandfather; at least it is necessary to start the process much earlier in the individual career than his entrance upon the practice of medicine.

The truth is, however, that the movement is much further reaching in its intent. Its real purpose, as its slogan ("business in medicine") implies, is an attempt to turn the practice of medicine itself into a business; or at all events to develop a strong business side to medical practice. And we are afraid that this is responsible for a great deal of the trouble with medicine at the present time, and will be for much more trouble in the future, unless it can be halted.

Not that it is succeeding. If it were, or could, it would not matter so much. But it can not; and that is what makes it so demoralizing. It only stirs up discontent and heart-burnings without any reasonable prospect of satisfying them. It makes a false play upon the natural desire of the medical man for material success. The physician sees, all around him, the business man becoming wealthy and independent, while he and his confreres seldom make more than a living competence; and, being human, he is envious of their happy lot—at least the fleshly part of him is. Then come our propagandists, and, appealing to this sentiment, preach the gospel of "business in medicine." The sentiment, they aver, is a perfectly proper one. We stick too closely to our worn-out traditions. Medicine, they say, with an engaging air of frankness, is, after all, a business game, too, to be played according to the same rules and with the same chips as any other business. Take a leaf out of the business man's book, copy his methods and processes, and there is no reason why we can not realize his results.

It is all wrong. Medicine is not a business and never can be. The physician is not a business man, and never can be. The very temperament and qualities which make a good physician are incompatible with those which make a good business man, and *vice versa*. The basic principle of business is to "buy in the cheapest market and sell in the dearest." How can such a principle govern an applied science or art? The fact that a few geniuses in science and art do occasionally receive big prices for their work does not affect the principle of the matter one iota. *Every* good business man makes money; that is the function and the test of a good business man. But not every good scientist or artist by any means makes money; and that is neither the function nor the test of a good scientist or artist. It is with him an incident, if not an accident. The man who deliberately elects a career of medicine must look for his rewards in other kind than money. He can not, in the nature of things, make money, because he can not buy in the cheapest market and sell in the dearest. For him the balance of trade is usually the other way. And the great majority of physicians are honestly bent upon worshiping the god of science and service, not the mammon of business; only that this "business in medicine" propaganda, working upon their human love of competence and comfort, has unsettled and misled them. It spoils a good profession to make a poor business class.

This mistaken tendency tinctures and vitiates medicine in all of its phases and institutions. Many medical schools are conducted as business enterprises, on business principles, and by business methods, and openly boast of it. They are frankly made to "pay;" emulate each other in the number, rather than the quality, of students they matriculate; and measure their value (as one discredited school recently did in a suit for damages against the State board) by the amount of income they pay, not to their faculty, but to their stockholders.

It taints the hospitals—the medical aspect of the hospitals, we mean, for of course there is no reason why a hospital should not be a business proposition. Indeed, there is no reason why in every medical relation and institution the business which inevitably attends its conduct should not be administered in a business-like manner. It is perfectly proper that the business which is unavoidably associated with the conduct of a medical school should be carried out in the spirit of business. That is wholly different from making a business of the school itself. It is equally proper that the administration of the business affairs of a hospital should be done upon strictly business principles; would that more of them were so conducted! But the actual work of the hospital—the care of the sick, etc.—these phases of the institution should be distinguished to the extent of entrusting them to a separate body of men altogether.

Of course someone will say we are belittling money values and discounting earning power, and all that sort of thing. But of course we are not. That a physician must look after himself and his family. Of course he must; we know that. That we are old fogeys. But we are not. We believe in simplifying and modernizing all the relations between doctor and patient. We welcome every move to increase the doctor's earning power by increasing his efficiency. We hate the least smell of professional smuggery and aloofness. But every intelligent and honest man will know what we are tilting our lance against—the disquieting and disappointing attempt to turn the practice of medicine into a business game, in which dollars are the stakes and human lives the pawns. "Render unto Caesar the things that are Caesar's, and unto God the things that are God's;" and if Caesar comes off second best, why, that is where he belongs in the vocation of medicine. It is time that the propaganda were antidoted by a wholesome propaganda of the opposite sort.

THE POST HOC PROPTER HOC FALLACY.

IT is astonishing to what an extent the *post hoc propter hoc* fallacy prevails in the interpretation of medical data, and is permitted to vitiate the conclusions of medical science. The physician—the trained investigator, even—is, as a rule, a good observer, but a rather loose interpreter of that which he observes. Therefore, for the same given number of similar observations, it takes medical science, as a rule, longer to arrive at a sound deduction than it takes any other applied science.

As a simple and obvious illustration of what we mean, we cite an article which recently appeared in a high-class medical journal, reporting and discussing a case of alleged syphilitic endarteritis. The patient, according to the report, had been a heavy drinker since about the age of twenty-five. At thirty-four, or thereabouts, he contracted syphilis, went rather rapidly through the various stages of the disease, and within two or three years of the initial lesion fell a victim to cerebral degeneration and died. A post-mortem disclosed a condition of marked arteriosclerosis, and the case is reported as demonstrating, first, the influence of syphilis in producing arteriosclerosis, and second, the short interval between the initial lesion and the development of the sclerosis.

In our opinion, the history of the case demonstrates neither the one point nor the other. It may be that the syphilitic infection was the direct cause of the endarteritis; no doubt it had something to do with aggravating the condition and hastening the denouement. But the point we make is, that in the confessed presence

of an alcoholic history for almost ten years previous to the syphilitic infection the element of alcoholism is so strong as to raise a presumption in favor of alcoholism as the prime factor in the production of the endarteritis, and certainly sufficiently strong to annul the value of the case as an argument for the two propositions which the author sought to establish.

Unfortunately this is the character of report and testimony upon which many medical propositions are predicated. Be it understood that we are not disputing the conclusions reached in the particular case under criticism. Undoubtedly syphilis does cause endarteritis, and often induces it within a few years after inoculation. But this case is not one which offers scientific evidence of the truth, and if it had been a brand new proposition which the author was seeking to establish, instead of one which we all conceded, his report would have been positively misleading. Of course, such loose processes of demonstration do not in the end prevail. Of course, in her ultimate conclusions, medical science is as sound as any other science. But they tend to confusion, and lead to loss of valuable time and work. It is just as easy to be accurate from the beginning, or, if accuracy be not available, to keep silent.

TRUE WORTH.

Not on the vulgar mass
Called "work" must sentence pass—
    Things done that took the eye and had a price;
O'er which, from level stand,
The low world laid its hand,
    Found straightway to its mind, could value in a trice.

But all the world's coarse thumb
And finger failed to plumb,
    So passed in making up the main account;
All instincts immature.
All purposes unsure,
    That weighed not as his work, yet swelled the man's amount.

Thoughts hardly to be packed
Into a narrow act,
    Fancies that broke through language and escaped;
All I could never be,
All men ignored in me,
    This I was worth to God, Whose wheel the pitcher shaped.

—*Browning.*

Medicine and the Lay Press.

By THOMAS G. ATKINSON, M. D., St. Louis, Mo.
Professor of Nervous and Mental Diseases, American Medical College.

THE PUBLIC aspects of medicine are by far the most absorbing, as well as the most important, with which the medical profession of today has to deal. As with religion, so with medicine, the time has gone by when the profession could maintain a "closed book," into which the public were not permitted to look, and out of which dogmatic doctrine and arbitrary instruction were to be handed down by an exclusive priesthood. The people nowadays demand, and rightly demand, to be made partners in the truths of medical science; and the question of how best this may be done is an urgent and practical one. It is discussed frankly and boldly in this article, and while we do not expect our readers to agree with all that is proposed, we trust it will awaken further discussion of the subject.

All things considered, the muck-rakers have been pretty easy with the medical profession. To be sure the quacks have "got theirs;" so have the fakir medicine men. But these instances can hardly be regarded as attacks upon the medical man, since both of these species of undesirable citizen are outside the fold of regular medicine, and in each case the attack was instigated and led by the profession itself. The assault upon vivisection has been a continuous performance for the last quarter of a century or so, and is not muck-raking within the meaning of the term. Aside from these instances the public inquisition of medicine has been remarkably quiet.

It seems, however, that the doctor is not to go scot free, after all. During the past year or so there has been more or less mild and desultory firing upon him and his institutions, sometimes by guerilla detachments of the profession itself, sometimes by laymen; and now it would appear that an organized battery of guns is being trained against him. Shell after shell is finding his weak places with an accuracy which suggests that the gunners must be coached by someone in the camp of the attacked. The surgeon, the specialist, the fee-splitter, therapeutic nihilism, medical ethics, medical organization—all have come in for their share of criticism; and even the revered figure of the family physician has not escaped. At the present time the medical profession may fairly be said to be "under investigation" by the public, as represented by the magazine press.

It must be frankly admitted, I am afraid, that many of the things which are being said (and some that are not being said) about the physician and his organized institutions and his code of ethics, are true; albeit there is another side to them also. Of these matters in detail I hope to have something to say at another time, if haply I find sufficient favor with the editor to be invited to come again. But the central, radiating, all-pervading trouble with the whole medical situation, I think, is the lack of publicity that characterizes the medical profession and everything connected with medicine. And this lack exists and persists in spite of the specious effort of modern organized medicine to remove it. I use the word specious in no carping spirit. I believe the effort is well-meant enough, but mistaken in its direction and its methods. A lively appreciation of the defect and its intelligent removal should, I am satisfied, not only forestall all

further censure of medical men and institutions, but would open up a world of new opportunity and progress to medical science itself.

The president of the American Medical Association, in his inaugural address at Chicago in 1908, gave utterance, in a sort of semi-official way, to a timely and profound truth. "No permanent advance will ever be made in medical science," he said, "unless the people are made co-partners in the truth." He further courageously declared that he had an abiding faith in the public; that when made to think, the public always reaches a wise solution to every problem, and that the key to a safe public opinion is to make the public think. These are wise words, worthy of, and pertinent to, the present medical situation. The only amendment I would make to them would be to drive their point a little deeper into basic principles, and to spread their application a little wider in public policy.

The admission of the public into the truths of medical science and the happenings of medical practice is not simply a courtesy which medicine owes to the people; not only a matter of expediency for medical science itself; it is a constitutional right of the public. Medicine is but a specific branch of the world's work; and, as a stream can not rise higher than its source, so the efficiency and intelligence of this division of the world's work can not be any greater or less than the public relation toward it determines. The medical profession is but a representative body of men delegated by the public to do this special work, which is ultimately a public function. It is a committee, so to speak, appointed by the public on this special subject, and required to report to the general assembly. The fact is, the recognition of this truth by the medical profession is a trifle tardy. The public has already given unmistakable indications that unless the profession displays a little more frankness it stands in danger of forfeiting public fealty.

Certainly no medical man, and I think no intelligent layman, will question that the exploitation of medical science now being given by the lay press is utterly unsatisfactory. The sporadic items of information upon medical topics now appearing from time to time in the daily papers, and even in the magazines, are of so grotesque a character that they would be ludicrous if they were not so serious. Under present conditions it is fairly certain that the public stands no chance of receiving through the public press any proper enlightenment upon matters pertaining to medical science. Yet it is equally certain that the lay press is the only agency by which such public partnership in medical truth can be adequately achieved. Certainly the profession can not expect to reach the public through its medical journals, even the most radical of them. And, for reasons which I shall cite in a moment, it is neither wise nor effective to try to reach the people through pamphlets or lectures, except for very specific and limited purposes, such as hygienic instruction and the like.

This is as far as the matter ever seems to get. The next step is one which the medical profession, because of its centuries of tradition and prejudice, finds it hard to take, and upon which, in the nature of things, the lay press can not compromise. It must, in short, be conceded that the public press shall carry out the publicity policy in its own appointed way, and that that way is the right way. This is, in my judgment, the crux of the whole situation. The medical profession wants to give the public a horse and to keep a rope tied to it. It agrees that the time is ripe for taking the public into its confidence, but it proposes to dole out its confidences in a paternalistic way, in such doses and by such methods as it thinks the public ought to have them.

It is useless to expect to enlist the public press, to any effective extent, in any such plan of education. It is neither the function nor the habit of the lay press to carry out educational propaganda of this kind, nor can any real enlightenment, in medicine or in any other subject, be brought about by a deliberate attempt to "educate" the public. Public education does not come about by this sort of forced campaign, but by a natural, unconscious process of selection of facts; and the people are themselves their own best assorters and interpreters of the facts. With all its faults the lay press is the only form of journalism that understands and carries out this principle; and to this principle and method it owes the tremendous power it wields over the minds and conduct of the people. Even the old-time "editorial" has dropped into comparative disuse in the modern lay press; the reading public nowadays largely constructs its own editorials from the many-sided presentation of the news of the day.

It is not for the medical profession to complacently and paternally decide in what subjects the public shall or shall not be educated. What the public needs, and rightfully demands, is that the salient facts and truths of medical science shall, from time to time, as they transpire, be freely and frankly laid before them. The public neither demands nor cares for the *technicalities* of medicine; that is the aspect of medicine to which it has delegated the profession as its agent. Besides, it is not with medicine as a science that the public is chiefly concerned, but with medicine as a practice—as a branch of the world's work. The best interests of both public and profession require a day-to-day canvass, through the public press, of the current happenings of medicine, so far as they relate to matters of general interest, just as is done with every other department of industry.

One medical writer proposes that, as all the great dailies have their sporting and financial editors, they should also have a medical editor to exercise his discrimination in medical topics. It must be remembered, however, that these department editors do not attempt any didactic "education" of their readers in sporting or financial matters. They simply select and present to the reading public such news in their departments as their editorial judgment finds interesting, and from an unconscious absorption and assimilation of these items the public learns its lessons and forms its habits of thought. A medical editor on the public press, if his influence is to be equally broad, would have to be a man in whom the journalistic instinct predominates, following out the same editorial, not paternalistic, dissemination of medical news.

Of far more vital importance is the relation and attitude of the medical profession at large to the lay press. It is from the medical profession and its sphere of action that the public press—whether through a lay or a professional editor—must draw its news. What the public wants is, not to be preached to, but to be given the news. It wants to know "what's doing" in medicine and surgery. If it is the sense of the profession that the public should be made partners in its truths, then the profession can no longer expect to exercise a *didactic* censorship of the medical news to be disseminated, but only an *editorial* censorship, *i. e.*, a selection of what is interesting and a reasonable care for its truthfulness.

Recurring to the illustration of the sporting and financial editorship of the lay press, it must be remembered that the press is given full and free access to all that the sporting and financial worlds and their exponents have to offer. Its representatives have their place in the baseball field and the board of trade; sporting men and financiers permit themselves to be frankly interviewed, and withhold nothing except in behalf of

special interests, of which medicine has none.

It is here, I think, that medicine is at fault in its attitude toward the public press, and behind the times in its conception of its public relations. According to the present ethics and policies of the profession, the lay press finds every door to reliable information on medical doings and subjects tightly barred, and can hardly be blamed if, in its zeal for news, it exaggerates and distorts such items as occasionally spill over into its ken. It is high time that all of these stupidly childish barriers, which have been so long maintained between profession and public, were swept away. The physician should be permitted all the avenues of approach to and influence over the public —including the daily press—which are open to every other man; and the public, through the lay press, should be given the same freedom of access to the truths and happenings of medical science as it enjoys in respect of all its other branches of knowledge and industry. The doors of communication between the medical profession and the lay press should be thrown wide open, as in all other departments of life, regardless of the apparent melée that may attend such a freedom, and the public trusted to perform its own discrimination and evolve its own appreciation of medical men and things.

I know all the stock objections to this policy of publicity—the dangers to the public and the embarrassments to the profession that are supposed to lurk in it. But these arguments have a very ancient and fish-like smell. They were all, at various times, urged against a similar plea for publicity in religion and law; and the history of both church and bench has given them the lie. They are out of date. In this country, as everybody knows, the people dictate medical qualifications and regulate medical practice. Why may they—and, one may ask, how can they—do this, if they are not to be permitted free access to all the data? After all, medicine is not really a closed art; anyone may dip into it who has the inclination and the very moderate price. And the fact that only a normal proportion of persons do engage in it amply shows that the public, as a whole, is not morbidly concerned with the details of medicine, but rationally interested in its common aspects, just as they are interested in aviation and what-not.

There are, to be sure, certain conditions surrounding the practice of medicine which forbid an indiscriminate publicity. Sickness is a peculiarly personal affair, and nobody wants a reporter nosing into its details. The relations of physician and patient are peculiarly confidential relations, and nobody wishes to have them made subjects of newspaper interviews. But the same conditions pertain, in more or less degree, to every walk of life; and they adjust themselves. Not even a professional code of ethics is needed to regulate them. The doctor who gossiped to the press about his patients' affairs would very quickly find himself without any patients, just as a lawyer, upon the same terms, would find himself without clients and a broker without principals.

Aside from this personal element, which enters into every class of work, the doings of medicine should be just as frankly exploited to the public in the daily and weekly and monthly press as those of any other branch of industry, and not only the occasional great achievements, but the day-to-day incidents of medical progress, freely reported, with names and dates and interesting detail, just as are the current happenings in other lines. The rule that a physician may not talk to a reporter, or have his name in the newspaper, or discuss his profession, its methods and weaknesses and failings with the laity, is simple nonsense, no more applicable to the doctor than to the lawyer or the engineer. The medical profession can not too quickly dismiss the silly idea that the public is incapable of grasping and evaluating the truths and happenings of medicine. The so-

called "confidences" and "communications" made by organized medicine to the public are ludicrously stilted and arbitrary, like the didactic explanations vouchsafed by a school teacher to children; the real essence of the matter, and the real happenings are withheld under the foolish notion that the public can not understand them.

When one considers the secrecy which enveloped church and courts in former times, and the power they wielded over ignorant people, one is surprised, not that they occasionally abused their power, but that they were, in the main, so just and moderate. So with medicine today. Considering the power of life and death it holds over a public that knows practically nothing of its inner workings, it is really remarkable that the profession is, upon the whole, so clean and honorable. For it *is*, on the whole, clean and honorable. Perhaps it is the very ancientness of its traditions and privileges that has imbued it with a sense of *noblesse oblige;* it is upstarts, usually, who abuse power. But, however that may be, the time has come, as the late president of the American Medical Association said, to "make the people copartners in medical truth." There is but one adequate agency of public dissemination—the agency which, in spite of all its faults and abuses, is, after all, the great commonizer of human knowledge, the clearing house of human progress—the public press. The medical profession must lay aside the last vestige of its priestly exclusiveness and avail itself of the unhampered medium of the lay press. Such a course constitutes the surest pledge of medical progress and the only efficient wholesome corrective of dogmatism and self-sufficiency.

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TREATMENT OF ADDER BITE.

In the treatment of adder bite, Ernest F. Cowles writes in the *British Medical Journal,* that, as a first step, he immediately applied a tight ligature about three inches above the wrist, and soaked the whole hand in a strong solution of Condy's fluid. The thumb had two small punctures about ½ inch apart on the dorsal aspect of the first phalanx; the openings looked like small pin pricks. He made a deep crucial incision over the wound, and allowed it to bleed freely; the wound was then filled up with crystals of potassium permanganate, and dressed with double cyanide gauze. A mixture of digitalis, compound spirit of ether and ammonium carbonate was given, and a hypodermic of strychnine, $^1/_{30}$ grain. Hot-water bottles were applied to the feet, legs and abdomen.

However, the swelling of the hand increased greatly, and there was much pain in the arm. The author gave the patient a hot rectal saline injection, and decided to infuse normal saline solution into the axillæ. When the ligature around the wrist was loosened slightly to avoid tightness, the patient cried out with pain, which he said shot down his spine and legs. The pain was followed by vomiting and collapse. Another hot rectal saline and more of the ether mixture and a hypodermic of strychnine were administered.

As the patient's condition did not improve, local injections of sterile 5% permanganate solution at the edge of the edematous area were made; three separate injections were made at various sites around the limb; normal horse serum was also proposed to be given in 10 c.c. doses three times daily. Two hours after the first dose of normal serum the ligature was loosened again. There was some pain in the dorsal spine, and also slight pains down the legs, but no nausea or vomiting or collapse followed. Hot rectal salines were administered every three hours, and the ether mixture every two hours; nourishment in the shape of soups, milk, and egg-flip was given freely. The patient responded to the treatment, but for a month had a good deal of stiffness in the hands and fingers.

"Burning the Candle."

By GEORGE SHERWOOD HODGINS.

(In *American Industries.*)

THIS ARTICLE is not written by a medical man, nor does it deal with a strictly medical topic. Nevertheless, it sets forth what may be called the "common sense of medical science" in such a forcible, impressive way, and is so timely at this season of the year, when every busy man (including the physician) should be thinking of slackening his pace a little and conserving his energies, that we feel justified in giving it a conspicuous place in our columns. We hope that our readers will take its momentous lessons to heart, and not only put them in practice in their own lives, but urge them upon those over whom their professional relations give them any degree of influence.

I asked a busy man why he did not take more time to rest, and he misunderstood me. He confused rest with lack of activity. I explained that I had not suggested that he should do nothing, but simply that he should change the form of his activity. He replied, with the least touch of superiority in his tone: "My dear fellow, do you suppose a passenger car on the Pennsylvania Railroad, constantly traveling between New York and Pittsburg, would hope for rest if it should be run on the New York Central between here and Albany?" and he triumphantly added, "That would be complete change of activity and change of scene also."

I pointed out that the car, when on the New York Central, would run upon a track having the same gauge as that of the Pennsylvania Railroad; that the wheels would revolve just the same on both lines; that their motion would be arrested by the same brake and the whole running gear would be subjected to similar conditions on either railroad. But I also made it clear, that if the car had been structurally adapted for railway service and was also capable of floating in water, and had been towed up the Hudson River to Albany, and moreover, if it had a brain capable of being tired or refreshed, then the change would be highly beneficial—to its brain.

The human brain is always active and it is impossible for a man to stop thinking, though it is possible for him to direct his thoughts. In sleep the brain is less active, but consciousness, in the strict sense of the term, never departs. A person accustomed to the quiet of the country at night may not be able to sleep in a large city hotel. He is constantly awakened by what are to him the unusual noises of the street. There is the clang of the overworked street-car gong, and the cry of the newsboy with the so-called "extra." There is the melancholy whistle of the river boats and the tolling of bells for the hour, as if everybody did not carry a watch. On the second night he fares better and thinks he rested well because he was tired after his first night. He misses the fact that the alert brain, which at first kept the mind active, finding later that the noises do not mean danger, did not, on the second night, arouse the sleeping limbs.

The brain is normally rested by sleep, the directing will is temporarily withdrawn, the body is relaxed and the darkness and comparative stillness reduce the number of external impressions received. The rebuilding of brain tissue is greatest and the strain caused by cerebral activities is reduced to a minimum. The brain is a wonderful development of bodily

structure. Science tells us that the brain of a fish is very small compared with its spinal cord and with the nerves which branch out from the cord. In reptiles the mass of the brain compared with the spinal cord is greater than in fishes. The brains of birds show an advance over those of reptiles. The lowest mammals exhibit a superiority in this direction over birds, the higher mammalia are a step above, and the series culminates in man.

All through these gradations the increase in proportion of brain to spinal cord has been paralleled by the increased development of the sense organs. The brain appears to have had its origin in nature's endeavor to provide the necessary and highly complex terminals for the reception of sense impressions. The nerves of sight, hearing, smell, taste and touch respectively reach in the brain corresponding masses of specialized nerve cells, responsive only to the appropriate call of each. Modern science has succeeded in locating certain brain regions as being the seats of certain sensations, and the governing centers for the movements of particular limbs. A severe blow on the left temple will deprive a person for a time of speech. Another tract has to do with the movement of a hand, another with a foot, and so on.

Many actions are involuntary, such as the closing of the eyelid at the sudden approach of some object. Here the ingoing stimulus reaches the brain and is "reflected" into an out-going stimulus which reaches and acts on the muscles of the eyelid. The act of closing the eyelid is performed without the impulse producing in the brain any consciousness of the process. This action is said to be "reflex," and all constantly repeated actions tend to become reflex. Nearly everyone has noticed when walking on the street, that it is actually easier to pass over a longer distance in going around behind a slowly moving vehicle, thus maintaining one's speed, than it is to stop and wait for the vehicle to go by. Keeping up one's pace is more or less reflex. Stopping and waiting would have been a conscious act. This is a bit of nature's economy. The fatigue caused by a reflex act is less than from a conscious one.

We often speak of a thing happening "as quick as thought." The rate at which nerve impulses travel vary from sixty up to perhaps ninety feet a second. In man the time occupied for a reflex action is negligible, but if the Statue of Liberty in New York harbor came to life and was bitten on the foot by a mosquito equal to the task, the nerve impulse traveling at the speed of an express train would require about two seconds to reach the head. The return impulse, taking the same time, would allow the mosquito (perhaps the size of a puppy-dog), about four seconds ere the goddess would move her ponderous foot and shake the insect off.

Some scientific men, studying the many strange reflex actions of which we are capable, and having regard to sense impressions, have called us "conscious automata." They say a dog seeing a rabbit has his brain stimulated by the optic nerves, and that the brain in turn stimulates the muscles of his legs, and pursuit of the rabbit results. They say the dog did not hunt for the rabbit in the first place, but seeing it he automatically pursued it, because the once conscious act of his ancestors has become a reflex action to him. The fact that "reflexes" sometimes look like conscious efforts of the will, may explain many of our so-called impulsive acts. Shakespeare says in *King John*, "How oft the sight of means to do ill deeds, makes ill deeds done."

The investigations and theories outlined above prove that man is after all a very complicated piece of mechanism and needs care and special attention like any other piece of delicately constructed machinery. Arnold Bennett truly says, "In case of friction, the machine is always at fault."

Character is the sum of our habits, and they are formed for the most part unconsciously by daily repetitions and without definite plan. Doing what we dislike, the talk of a bore and the effect of "things going wrong" produce a mental state which, when it reaches the point of fatigue, produces a poison which alters the constitution of the blood. The constant recurrence of identical stimuli, *i. e.*, the same thing over and over again, invites a form of fatigue, as when one is constantly associated with an unpleasant personality in the office or elsewhere. All this does not produce any serious result in the brain of the average man provided he has sufficient recuperative powers. In some it produces irritability, and irritability is a bad brick in the foundation of character. Mirth and humor are the antidotes for irritability. It is probable that the popularity of comic opera and the buffoonery of the vaudeville stage are commercial attempts to supply, artificially, what habitual good humor would do of itself. The proper view to take of those we meet in daily life is to regard them as the raw material out of which we must make a happy day for ourselves, not by walking over them but by mingling with them on friendly terms.

When we come to sheer hard work with the brain, we are close to the danger zone for many a business man or factory head. Attention to one thing or one line of thought is a strain very like excitement so far as the effects are concerned. It takes more blood to supply a hard-worked brain than it does for the same brain when it is tranquil. An excited man finds that his temples are throbbing. More blood is needed because the waste of tissue is greater. Nature here endeavors to itroduce a sort of economy. Close attention causes many external impressions to be shut out from the consciousness. The process of shutting out external impressions assists in maintaining attention, but while it helps the worker for a time, it has its effect on the brain. Cats, both large and small, which lie in wait for their prey, develop such concentration of attention as practically to deaden the other faculties. When in this state hunters can usually approach them without being perceived. A man may work hard amid noise and disorder, but in time fatigue appears as nature's protest against the strain of work, the noise and the distractions caused by the disorder, and the attention automatically slackens.

A poor attempt at recuperation is named by the man who looks on his out-of-office time as so much loss and who causes it to be a period of dull routine. Such a man is like one who laboriously applies a highly tempered tool to the muddy surface of a water-soaked grindstone. The real recreation, or re-creation as the word is, may be had by him who enjoys the happy home circle with its wholesome non-business atmosphere. The wordy war of wit among congenial friends will strike his cares and worries off in scintillating flashes as a spinning emery disc strikes glowing sparks from a surface of dulled steel.

An illustration of breakdown from an overworked brain is given by Prof. Mosso, an Italian psychologist. A dozen men in apparently good health, if exposed to the weather for some hours on a very cold night, will give evidence of the physical strain in different ways. One will have a cold, another a sore throat, another will develop pneumonia, still another will have intestinal disorder, while others will not be seriously affected. The exposure to cold found the weak points of those it touched and disease entered through the unguarded gate. Apparently normal men differ widely in temperament, and temperament depends principally on the nervous system. If the nervous system is run down, the cumulative effects of constant small overstrains with insufficient recuperation, are like the oft-repeated stresses in a bar of steel, each below the elastic limit, yet they produce in time, if no remedial or

heat treatment intervenes, the slow creeping "fracture in detail" and the final, sudden snap.

The man most concerned does not realize what he is doing when he overworks his brain, and so it happens that very little care is taken of the real "working power" of the great business enterprise. Friends may see it, but the brain of the tired man works on, oblivious of its own condition. It is wisdom for each man to stop and "take stock" of his powers. In nine cases out of ten, the man who breaks down does not expect it. It is the "skating on thin ice" by a man who has no idea of his mental whereabouts, which causes his partners or business associates to insure his life, and pay the premiums themselves. This they do as a safeguard for their own interests, so that when the "business head" of the organization or the "brains" of the enterprise shall collapse, they will not be left without the results of his concentrated and forced effort to do the work, the whole work and nothing but the work, every day, all day, and many times at night.

"If you want something done, go to a busy man," so runs the proverb. But the busy man who can help you is he who is willing to use, to his own mental advantage, the wholesome distractions that daily life affords. Prof. Mosso tells us that most people take 134 thousandths of a second before responding with the hand to a touch on the foot. Fatigue of attention increased the time to 200 or 250 thousandths of a second, an increase of 49 and of 86% respectively. A steady worker thinks more slowly as time goes on. This is the cost of being tired.

As yet science does not attempt to measure the value of cerebral effort. It may be physiologically the same to think out a money-making act as it is seriously to consider the appropriate filling of the children's stockings at Christmas. The result in the one case may be dollars and cents, and in the other your own satisfaction and a group of happy youngsters. The real value to you lies in the change of thought it produces, and your mental health is evidenced by your willingness and your ability to change. Look out for yourself when you only want to do one thing; it's a sign of old age that you do not need to have. Everybody admires a fine automatic turret lathe, and the cause of the admiration is that it can perform more than one operation, cleanly, expeditiously and with vigor. Your range is almost infinite compared to the best turret lathe ever made. The human mind, healthy and alert, travels on no particular set of rails. Its ability to change from one thing to another and to gain rest by the change, is at once its marvelous faculty and its salvation.

The danger of brain-fag is peculiarly ours. Prof. G. M. Beard, the noted American neurologist, was convinced that in no other country is nervous exhaustion so common as in the United States, and that no other country exhibits so many varieties and symptoms of nervous debility. Prof. Mosso believes that among politicians and business men the effects of over-strain are most marked. The remedy is simple enough and it is constantly given by friends to one another at the moment of parting: "Well, good-bye, old man, take care of yourself." But the reply, "Yes, yes," is meaningless, and the self-constituted drudge goes back to his limited horizon bounded only by his work.

This man will perfect every detail in his factory. He will supervise his organization, cheapen production, introduce safety appliances, look to his fire protection, revise business methods, secure new contracts, listen to shopmen's grievances, facilitate the handling of material, market his product, advertise his wares, direct expenditure, point out economies, keep efficiency before the working force—and yet he will not take ordinary common-sense care of the "guiding principle" of the whole thing. He would make more

fuss if the roof leaked than if he felt his head swim at his work. It is impossible to put in accurate percentage the difference in time and mental force which he expends on his work and on the care of himself. It is, however, an extremely conservative estimate to say that the care of himself stands in proportion to his work, far less than the duration of a lightning flash does to the time occupied in the passage of a heavy and prolonged thunder storm. If an outsider from the planet of Mars saw only this man's actions, the visitor might declare that the man's evident desire was to build a machine to make money and to put himself under the sod as quickly as possible.

The remedy is easy and the medicine pleasant to take. *You can best mind your business when you make a business of your mind.* Did you ever stop to think what an ocean of pleasure and interest lies stretched out beyond your narrow shore As a healthy change. you can read history, and mark the slow but sure advance of personal liberty. You can play golf, tennis, polo or what you will. You can be the home carpenter and man-about-the house. You can study physics and discover enchantments in the common-place things of life. You can roam unhindered in that fairy-land of science, astronomy, and on a star-lit night you can pick out the constellations as they "burn in the velvet blue." If you are observant go into the woods and look with new interest on the flowers and the trees. Last summer you might have seen the cicades, after seventeen years of grub life in the earth, turn into winged locusts for about three weeks and die. You can compare their life's efforts with your own, and it may be worth while.

Whether you read, or play, or work, or search, or observe, you must give up the steady, killing grind. Enjoy yourself in many different ways, for what shall a man give in exchange for his life?

THE POSITION OF THE CRYSTALLINE LENS.

It is usually assumed, says Lucien Howe, M. D., in the *Ophthalmic Record,* that the crystalline lens of the human eye is in the perfect position, as shown in the text-books; also that during accommodation the two surfaces of the crystalline change in curvature in a perfectly regular manner. These assumptions, says Dr. Howe, are not warranted by the facts, for the crystalline is very seldom in the exact position shown by the text-books, and while the rear surface changes regularly in accommodation the front surface does not.

As a result of these departures from exactness there may be lenticular astigmatism to the extent of 0.75 D. and a falling off in the visual acuity during accommodation which hitherto has been explained in other ways.

The instrument used by Dr. Howe in these experiments is known as the phacometer. It would seem to show that the usual method of inferring correction for near vision from tests made for distant vision is not a safe one.

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NUCLEIN AS A SURGICAL DRESSING.

Redfield, in the *New York Medical Journal,* reports that nuclein has been tried as a local dressing for certain infected wounds. The first case treated was that of a printer who had fed his index and second finger into the press, which produced severe crushing of the first phalanx. The wound was washed slightly and dressed with sterile gauze soaked in nuclein solution, full strength. The dressing was kept soaked with nuclein solution for five days, and at the end of that time the wound was completely healed. Other striking cases have been similarly treated with such success that the author invariably uses a nuclein dressing when he expects trouble from infected wounds.

Notes on the Treatment of Malaria.

By J. A. BURNETT, M. D., Marble City, Okla.

DR. BURNETT has treated of this subject once before in the pages of the BRIEF, but there are many sides to it, as those who practice in malarial districts well know, and no apology need be made for bringing it again to the attention of our readers. The author here raises a somewhat novel problem in connection with malaria, namely, the rationality and possibility of auto-therapy, which has been found efficacious in so many infectious diseases. He further discusses the value of the salicylates in the treatment of malaria, and relates some of his own experiences and observations with this class of drugs.

These notes on the treatment of malaria may be of some interest to those that practice in malarial districts, as they are not touched on in many articles on the treatment of malaria.

Recently Dr. Chas. H. Duncan, of New York, published a paper on "Auto-Therapy" in the *Lancet-Clinic*, November 4, 1911. He did not say anything about the auto-therapy of malaria in this article, and I wrote him and asked him if malaria could be cured by auto-therapy, and he said, "You ask for the auto-therapeutic cure of malaria. Malaria is a non-localized disease and vaccine therapy has not been very successful in its treatment. However, I should be tempted to try any discharge the patient may have for the toxic substance that causes the symptoms. Filter it and inject it hypodermically. Try the sweat. Place the patient in a hot room at about the same time the chill, fever and sweat comes on, then collect it by scraping it off, say the back, with a dull table-knife; dilute it, filter it with a Berkfield filter and inject it hypodermically. I should be extremely interested to hear of your results. Try auto-therapy in pneumonia, stubborn bronchitises and asthma, and you will not be disappointed."

The reader should bear in mind the difference in auto-therapy and vaccine-therapy. In auto-therapy the material must come from the sick patient that is to be treated.

Several years ago an experienced physician told me he could cure malaria with sodium salicylate. While this drug may not be an antiperiodic, there is no doubt but what the rectal use of it would be a valuable antipyretic in the treatment of acute continued malarial fevers.

In the *Journal American Medical Association*, April 6, 1912, Dr. L. G. Heyn, of Cincinnati, has an article, "Acute Articular Rheumatism Treated by the Rectal Administration of Sodium Salicylate." He states that large doses of this drug are tolerated when given by this method, preferably if administered with starch and a few drops of the tincture of opium. Dr. Heyn usually gives two to three drachms of synthetic sodium salicylate in six ounces of starch water with ten drops of tincture of opium. The temperature usually dropped to normal in twenty-four hours. I wrote Dr. Heyn and asked him about giving these injections, and he instructed a nurse to reply as follows:

"At the request of Dr. Heyn I take great pleasure in giving to you in detail our method for giving salicylate enemata.

"First empty the bowel by giving a high, simple enema, and in about one hour after this has been expelled we give the medicated solution, which is prepared as follows: Water six ounces, corn starch one teaspoonful (prepare as for laundry use); let cool and add tincture of opium fifteen drops, and as much sodium sali-

cylate as has been ordered by the physician; insert the tube from eight to twelve inches. We use the Davidson or bulb syringe."

I know one physician that uses ammonium salicylate as his favorite antipyretic, and I am inclined to think it would give good results if used by rectum as Dr. Heyn uses sodium salicylate.

Again, there is no question but what the soluble salts of quinine, as the bisulphate, could be used in this manner with extremely good results. Rectal medication for systemic effect is of great value and not appreciated by most physicians as it should be.

I consider the details on giving sodium salicylate by rectum will be of use to many physicians that are interested in rectal medication, as this is a proper method to use many other drugs in place of sodium salicylate.

In the *British Medical Journal,* February 25, 1911, is a valuable article on "Curative Influence of Roentgen Rays in Malaria." The *Journal American Medical Association,* in review of this article, stated:

"Roentgen rays in malaria—the effects of heat applied over the splenic area in relieving the pain attendant on an attack of malarial fever gave Skinner and Carson the idea that the Roentgen rays also might have a therapeutic action as the immediate effect of their similar application. That these conjectures were not without base is evidenced by the eleven cases reported.

"The application of Roentgen rays in cases of malarial fever relieves splenic pain and reduces recent engorgement; the temperature falls and does not usually rise again, and recovery is not attended by the anemia usually present in patients treated with quinine. The authors have not had to fall back on quinine in patients treated by the Roentgen rays, while they have had patients who resisted quinine and yielded promptly to the rays (quinine being discontinued)."

The curative value of the Roentgen rays in malaria should be thoroughly investigated, and I hope this method will attract the attention of all who are in position to experiment on this method of treatment. It may prove that the high-power incandescent or the arc therapeutic lamp will be equally as beneficial in the treatment of malaria as the Roentgen rays, and it deserves a thorough trial. The spleen could be treated with the therapeutic lamp and the liver with a good vibrator, which, if not curative in malaria, would at least be a valuable adjunct treatment.

Spondylotherapy, as taught by Dr. Abrams, of San Francisco, will no doubt offer much that is of value in malaria, as well as in the treatment of various other forms of diseases. According to my experience acids are often indicated in malaria.

In many cases the stomach is deficient in acids, and on this account does not absorb drugs very well. Again, my experience is that the liver is the most stubborn organ to control in malaria, and find it also calls for some acid.

Before I practiced medicine I knew a physician that used sulphuric acid in various torpid conditions of the liver. I find that in many cases sulphuric acid will clean a coated tongue after calomel and podophyllin has been used and failed to clean it off. Sulphuric acid works well with quinine and other remedies, as in my prescription, page 282, May, 1912, MEDICAL BRIEF.

Nitric acid is said to act on all parts of the body. When combined with hydrochloric acid and iron sulphate, as directed on page 282, May, 1912, MEDICAL BRIEF, it is a good combination for many cases of malaria.

Embolism and Thrombosis of the Vessels of the Mesentery.

By KINGMAN B. PAGE, M. D., New York City.
Surgeon to People's Hospital.

OBSCURE abdominal symptoms are often encountered by the general practitioner, for which he is at a loss to find an adequate explanation. Many cases of supposed appendicitis run their course and terminate, one way or the other, without the doctor being at all satisfied in his mind as to the correctness of the diagnosis. And not infrequently an abdominal syndrome which suggests intestinal obstruction occurs without the inevitable and complete obstipation which attends that condition. Here, at least, is one of these obscure conditions elucidated. Those who read and profit by Dr. Page's article will have at least one more landmark in abdominal diagnosis.

Occlusion was first noted by Virchow in 1847, and clinical manifestations by Litten in 1875.

Clinically it is impossible to distinguish embolism of the superior or inferior mesenteric artery from thrombosis of the mesenteric veins. Both conditions, as a rule, produce very acute symptoms. In some cases they resemble those of intestinal obstruction, in another class of cases peritonitis is simulated, or they may strongly masquerade as acute cholecystitis, duodenal ulcer or appendicitis.

The diagnosis is rarely made prior to operation, though certain symptoms to be hereafter noted may strongly suggest the possibility of this lesion.

Etiology.

Embolism occurs in both sexes, generally after the fourth decade, and is secondary to endocarditis or to atheroma of the mesenteric vessels.

Thrombosis may be primary following acute infective process, especially of the appendix, fallopian tube or enteritis. It may occur secondary to any hepatic condition which causes portal stasis.

Pathology.

After occlusion of the mesenteric arteries the collateral circulation is rarely established. The anastomozing vessels are of small size and carry but a minimum amount of blood to the impoverished area. The inferior mesenteric artery rarely takes up the work of the closed superior. This has been explained by its being a smaller vessel and not able to suddenly assume the functions of the larger. Furthermore, after the closure of the superior mesenteric artery the blood pressure in the superior mesenteric vein sinks to *nil.* The pressure in the portal system is lowered, making the return flow through the inferior mesenteric vein easier, and thus it is easier for the blood in the inferior mesenteric artery to flow through its normal channel than to pass through its anastomotic ones. A few cases post-mortem have shown that thiis condition—of establishing collateral circulation—has occurred.

The extent of injury to the gut is naturally dependent upon the site of circulatory blocking, and may vary from one inch to forty inches or more.

Symptoms.

The symptoms vary greatly in different cases. There are two groups of cases, the acute and chronic, of which the former is the larger.

In the acute cases the symptoms are ushered in with absolute abruptness at a time when the patient is in good health. There is a sudden intense abdominal pain, at first colicky in character, later becom-

ing almost unremitting, which is speedily followed by nausea, vomiting, and perhaps collapse. There may be a diarrhea or constipation; if the former, the movements are frequent and blood-stained; if the latter, obstruction is absolute, neither flatus nor feces being passed. In both, the abdomen becomes distended, rigid and tender. There are occasionally the signs of free fluid in the peritoneum. The general condition of the patient is poor from the first and rapidly becomes worse. The temperature is often subnormal. The pulse is always rapid and its quality bad. Blood-stained movements are found in 41% of the cases, but even when no blood has been passed the intestinal contents are always found to be deeply blood-stained.

The second smaller group is formed by cases of quiet, insidious origin, with a prolonged and varying course. Jackson and others have shown that the belief that the acute cases were dependent upon embolism and the chronic upon thrombosis is fallacious. In the series of cases collected by Jackson, Porter and Quinby there were seven dependent upon embolism.

The cases are almost twice as common in men as in women; and the majority are found between the ages of thirty and sixty years.

There is always the greatest doubt as to the nature of the illness from which the patient suffers. A diagnosis of intestinal obstruction is generally made, and it is only at the operation or at an autopsy that the exact condition of affairs is revealed.

Gerhardt considers the following signs as necessary for a diagnosis:

1. The presence of a source for an embolus.

2. Copious intestinal hemorrhages, not to be explained by disease of the wall of the bowel or by impediment to the portal circulation.

3. A rapid and marked fall of temperature.

4. Colicky pains in the abdomen.

5. The simultaneous or previous occurrences of embolism in other parts. Falk collected the records of seventeen cases of embolism of the superior mesenteric artery. In every one there was evidence of embolism having occurred elsewhere.

6. The occasional presence of a tumor in the abdomen, due to the infiltration of the mesentery by blood.

Not all of these signs are present in any cases, but the existence of some of them are necessary to the making of a diagnosis.

The prognosis is bad. The mortality in reported cases is 94%. Neutra, quoted by Jackson, Porter and Quinby, writes:

"In cases of acute onset the prognosis is indeed grave, but by no means absolutely bad, since behind these severe symptoms there may be hidden a chronic process which favors the formation of a collateral circulation, and on this prognosis depends. If, on the other hand, the course is a chronic one and only a few exacerbations are present, between which there is a complete absence of symptoms, the prognosis, nevertheless, is moderately bad, since in these cases it must be assumed that because of some hindrance a competent collateral circulation can not be formed. Accordingly, thrombosis of mesenteric arteries is of relatively better prognosis than embolus."

Treatment.

In the surgical treatment of these most serious cases the first and most essential point to remember is that the gangrene of the bowel may be in a state of progression. A well-defined line of demarcation between the healthy and the involved may be seen, but more often there is no abrupt transition from one to the other. Unless, therefore, a needlessly extensive resection is made, it is impossible in all cases to be certain that the whole of the involved loop of bowel has been removed.

It is, therefore, reasonable to suppose that the safest measure to adopt in all cases is the resection of the bowel which is undoubtedly involved, and the establishment of an artificial anus. If an end-to-end anastomosis is completed, a subsequent extension of the process of gangrene may cause an otherwise satisfactory operation to fail. Moreover, the patients who suffer from this affection are often more seriously ill, and an extensive removal of the bowel with the suturing of the cut ends together will occupy so much time, and will involve so much handling of the parts, that the strain may be beyond the patient's endurance. In the cases quoted by Jackson there were forty-seven which were dealt with by operation. Of these four recovered. This deplorable result is probably due to the performance of an operation unsuited to the patient's condition.

The case, as I have said, will probably be considered as one of acute intestinal obstruction, and will be submitted to operation for relief of that condition. All the measures of precaution that have been described will be adopted in order to shorten the operation and to prevent the occurrence of shock.

When the abdomen is opened there is generally an escape of fluid which is more or less blood-stained and may be offensive. The fluid resembles very closely that which we are accustomed to see in the sac of a long strangulated hernia. A rapid but careful examination of the intestine will reveal the exact condition of affairs. A deeply congested purple segment of gut will be found, and there will be no evidence of mechanical constriction or of volvulus to account for the condition. The mesentery to the implicated bowel may be immensely thickened by blood clot, so that a large tumor may be felt at once. The gangrenous gut is withdrawn from the abdomen and the whole loop involved is resected in the usual manner. Clamps are applied well above and well below the disease; the bowel is divided and with its mesentery the whole involved part is removed. The two cut ends of the bowel are then brought out from the wound side by side, and their peritoneal surfaces stitched to the parietal wound; or a Paul's tube may be placed in each end; or the cut edges of the mesentery above and below may be approximated and a few sutures passed, uniting the mesenteric portion of the bowel, the remainder of the circumference being left open and being brought up to the surface. In all cases drainage of the intestine must be insured. The contents of the bowel resected will be seen to be deeply blood-stained, and a blood-stained discharge may flow from the artificial anus for several days after the operation. When the bowel has been secured to the abdominal wall, the parietal wound is closed as rapidly as possible.

If the operation proves successful the patient will rapidly gain strength. A second operation for the closure of the fistula must then be performed as soon as it appears prudent to attempt it; for the fistula in the bowel may be high in the small intestine, and the discharge may be of an intensely irritating nature. The patient, moreover, may be suffering severely from inanition, as a result of the escape of food-material from the fistula.

* * *

HER husband was a merchant, and one day while down town she dropped into his office.

"What are all those books on top of the safe?" she asked.

"Those are my day books, my dear," he replied.

"And where are the night books?" she queried.

"Night books!" he echoed in surprise.

"Yes," she rejoined. "Those you have to work over at night sometimes, when you are kept here until two o'clock in the morning."

Osmotic Pressure and Its Physiological Bearing.

By REGINALD R. BENNETT, B. Sc. (Lond.), F. I. C., PH. C.,
and F. W. GAMBLE, PH. C.

IF a portion of the epidermis of a fresh leaf of *Tradescantia discolor*, subjected to the action of distilled water, be examined microscopically, it will be seen that the normally turgid cells maintain their shape, and that the violet-colored cell contents are everywhere in close contact with the rigid cell-walls. If the experiment of De Vries be followed, and the distilled water be replaced by a 7.5% solution of sucrose, the colored cell-contents will be withdrawn slightly from the containing cell-walls, while if the fresh tissue be immersed in a 10% solution of potassium nitrate, the protoplast will contract considerably, and will leave the cell-wall at most points. This phenomenon of plasmolysis is explained in the following way: the cell-wall is permeable by water and by the substances in solution; on the other hand the cell-protoplasm forms an extensible bag which is permeable by water but not by the substances in solution; when, therefore, the cells are immersed in water or any solution having a lower osmotic pressure than the cell sap, the tendency will be for water to pass into the extensible bag of protoplasm; but as the cell is turgid and is supported by a rigid cell-wall, little effect will be noticed. When the cell is immersed in a solution having a higher osmotic pressure than the cell-sap, water will be extracted from the bag of protoplasm, which will then contract and leave the cell-wall to a greater or less extent, according to the strength of the immersing solution.

The red blood corpuscle is a cell, the contents of which are enclosed in a delicate extensible membrane, permeable by water but impermeable by many dissolved substances. When red blood corpuscles are immersed in water they first swell up and then burst; the disruption of the membrane allows the hemoglobin to escape, and the corpuscles are said to be "loked" or hemolyzed. If a few drops of defibrinated blood are added to each of a series of solutions of sodium chloride of gradually increasing strength, the result, if sufficient time be allowed to elapse, is the same as with water until a 0.91% solution (weight in weight) is used, in which strength the red blood corpuscles will remain quite unaltered. Immersed in solutions which contain more than 0.91% NaCl, the red blood corpucles remain intact and retain their hemoglobin, but they shrink so that their volume becomes smaller. These phenomena are obviously similar to those observed with plant cells; in case of red blood corpuscles, however, the cell-wall is the semi-permeable membrane, and it is so fragile that when water passes into the cell the wall readily gives way. Plasmolytic experiments performed with blood corpuscles present a great deal of practical difficulty. With the microscope the red blood corpuscles can be seen to shrink under the influence of a strong salt solution, but the point at which the shrinking just begins can not be exactly determined because the change in volume is so very small. This difficulty has been partly overcome by physiologists, who summate the change in volume of many corpuscles by centrifuging the blood mixture in a graduated tube, when very small changes can be detected.

These effects of various solutions upon vegetable and animal cells are obviously of importance from a physiological point of view; in this communication an endeavor will be made to elucidate the mechanism of such effects and to show their bearing upon some departments of

pharmacy. In considering the influence exerted by a solution of a salt upon vegetable or animal cells it is necessary to distinguish between a purely physical action of the solution and any action due to chemical affinity between the substance in solution and some part of the cell or its contents. Again a distinction must be drawn between the cell and its contents acting physically as a semi-permeable membrane and any vital selective capacity inherent in the cell. This paper is concerned only with the physical action of solutions, and for this purpose a solution may be described as a homogeneous mixture of a dissolved substance or solute, with a liquid solvent, the latter being in great excess.

The Direct Measurement of Osmotic Pressure.

It is common knowledge that if a strong solution of sucrose be placed at the bottom of a tall jar and some water carefully added without mixing, a process of diffusion commences, which goes on until a homogeneous mixture results. This diffusion, carried on against the force of gravitation, may be regarded as resembling gaseous diffusion, and due to a pressure called osmotic pressure, under which the molecules of sucrose seek—as if in the gaseous condition—to escape from a position of high concentration to one of low concentration. This pressure can be measured in a suitable apparatus. For the purpose a membrane is obtained which is permeable by water but not by the substance in solution; if, then, a solution of sucrose, for instance, be enclosed in the membrane and the whole dipped in water, the tendency of the molecules of sucrose to diffuse will be prevented by the membrane, and the only way in which equilibrium can be established will be by the passage of water through the membrane into the solution of sucrose. Such a semi-permeable membrane is obtained by depositing copper ferrocyanide in the walls of an unglazed porcelain pot. In the best forms of this apparatus the copper ferrocyanide is deposited electrolytically; such a cell is quite impermeable by sucrose and is only slightly permeable by water—the water passes through slowly and only when assisted by a certain pressure. If the cell so prepared be filled with the sucrose solution and immersed in water, the pressure that develops can be measured by a manometer, connected with the cell by perfectly tight joints. Pfeffer was the first to measure the pressure developed in an osmotic cell charged with a solution of sucrose and immersed in water; he found that the osmotic pressure of a 1% solution of sucrose at a temperature of 15° C. was equal to 535 millimeters of mercury; of a 2% solution, 1,016 millimeters; of a 4% solution, 2,082 millimeters; the ratio between pressure and concentration being practically constant. The osmotic pressure of a solution of sucrose is, therefore, proportional to its concentration; or, stated in another way, the osmotic pressure exerted by a given quantity of sucrose in solution is inversely proportional to the volume of the solution. This statement closely resembles Boyle's law.

Analogous Properties of Gases and of Substances in Solution.

Pfeffer also studied the influence of temperature upon osmotic pressure, and showed that the pressure rises with increase of temperature; his work confirmed the conclusions previously reached by Van 't Hoff from theoretical considerations, that the properties of gases and of dissolved substances in dilute solution were similar; osmotic pressure is proportional to the concentration of the solute and to the absolute temperature. These conclusions as to the parallel properties of gases and substances in dilute solution naturally suggested the extension of Avogadro's hypothesis to such solutions, since it would appear that equal volumes of two dilute solutions having equal osmotic pressures at the same temperature must contain the same num-

ber of dissolved molecules. From Pfeffer's data it can be shown that the same equation may be employed to represent the behavior of dissolved substances and of gases; that what is in one case gas pressure is in the other case osmotic pressure, the volume being that occupied by one gram-molecule of the dissolved substance. Just as the gas laws are true only for perfect gases, so these considerations apply only to ideal solutions—that is, very dilute solutions in which the proportion of solute to solvent is infinitesimal. Dilute solutions containing gram-molecular weights in the same volume of solvent should, therefore, have the same osmotic pressure at the same temperature. Frequently, however, this is found not to be the case. The majority of crystalline organic substances behave like sucrose, but there are other classes of substances which behave quite abnormally. The most important of these classes is that which includes the strong acids, strong bases and salts—or, as they are collectively termed, electrolytes. The osmotic pressure developed by solutions of these substances is very much greater than it should be according to Van 't Hoff's law, and in very dilute aqueous solution may even become n times too great, n expressing the number of ions into which the molecule is dissociated. Colloid substances form another class of bodies that behave quite abnormally; their very high molecular weight presupposes a very low osmotic pressure, but it will be necessary to refer to at least one colloid substance that has no measurable osmotic pressure in aqueous solution. These abnormalities exhibited by some substances in solution have their parallels in the case of gases. It will be recollected that the acceptance of Avogadro's hypothesis was retarded by the discovery of some instances in which the vapor density was disproportionate to the molecular weight corresponding with the probable chemical formula. Thus the vapor density of ammonium chloride was found to be only half that corresponding with the chemical formula, NH_4Cl; the discrepancy was found to be due to dissociation of this salt in a state of vapor, by which the number of molecules was increased, with a corresponding reduction in the vapor density. On the other hand, the abnormally high vapor density of acetic acid indicates an aggregation of molecules.

Indirect Measurement of Osmotic Pressure.

The direct method of measurement of osmotic pressure by means of a semi-permeable membrane presents many difficulties; but since the theory of dilute solutions has been established by Van 't Hoff and Arrhenius it has become possible to calculate the osmotic pressure of most dilute solutions from the depression of freezing-point caused by the substance in solution. It is common knowledge that the freezing-point of a solution is usually lower than that of the pure solvent. The extent of the depression of the freezing-point depends upon the vapor pressure of the solution, and is therefore related quantitatively to the osmotic pressure. In the depression of the freezing-point we have a measure of the osmotic pressure of a solution which can in most cases be readily determined within limits of accuracy which are reasonably sufficient for biological work. The method of determining the freezing-point of a solution usually adopted is that of Beckmann. The apparatus consists essentially of two test tubes, one within the other; there is an air space between them which acts as a bad conductor of heat. A very sensitive thermometer graduated in 1/100ths of a degree, and a platinum or ebonite stirrer are supported inside the inner tube by means of a perforated rubber stopper. When the apparatus has been immersed in a freezing mixture of ice and salt, a suitable quantity of the solution to be examined is introduced into the inner tube and is gently stirred. The solution usually becomes supercooled below its freezing-

point until by vigorous agitation partial solidification is brought about. The latent heat of solidification causes the thermometer to rise to the proper freezing-point of the solution. A determination must also be made for the pure solvent, and the difference between the two temperatures on the empirical scale of the thermometer is the depression of the freezing-point produced by the amount of the dissolved substance. From what has been said it will be realized that solutions which have the same freezing-point should be iso-osmotic, or, as they are usually termed, "iso-tonic," and by the extension of Avogadro's hypothesis to solutions, equal volumes of iso-osmotic solutions should contain the same number of molecules or units in solution. If for a given amount of substance in solution the freezing-point be found abnormally low—and the osmotic pressure therefore abnormally high—the assumption must be that the number of dissolved units is greater than was supposed. It is the frequent occurrence of this phenomenon that renders necessary the determination of the osmotic pressure of each solution by means of the depression of freezing-point rather than by a simple calculation from the molecular weight of the substance.

Influence of Ionization.

Arrhenius has shown that the freezing-point of a solution of sodium chloride containing 0.117 gram-molecule per liter is —0.424° C.; the depression, calculated from the molecular weight, should be —0.219° C., the observed depression being thus 1.93 times greater than the calculated depression. Similarly the observed depression of a solution of sodium chloride containing 0.539 gram-molecule per liter is 1.85 times the calculated depression. The divergence between the observed and calculated depressions of dilute solution of sodium sulphate is even greater; the observed depression of a 0.028 gram-molecular solution is 2.66 times the calculated depression, and of a 0.195 gram-molecular solution 2.21 times. These figures show that solutions of some salts produce an abnormally great depression of the freezing-point, which increases in the more dilute solutions. Arrhenius has shown that in the case of sodium chloride the ratio runs up to 2.0 in very dilute solutions, and in the case of very dilute sodium sulphate solution to 3.0. This abnormal osmotic activity points to the presence of a greater number of dissolved units than Avogadro's hypothesis accounts for, and suggests dissociation analogous with that observed in the case of ammonium chloride in a state of vapor. The electrolytic dissociation hypothesis of Arrhenius affords an explanation of these divergences. According to this hypothesis acids, bases and salts in solution are dissociated to a varying extent into positively and negatively charged "ions;" thus sodium chloride in solution is dissociated into positively charged Na ions and negatively charged Cl ions, and if the whole of the salt were dissociated, the number of units in solution would be doubled. Sodium sulphate in solution is dissociated into two positively charged Na ions and one SO_4 ion, the latter carrying a double negative charge; if, therefore, all the sodium sulphate in solution were dissociated the number of units would be trebled. The proportion of molecules dissociated is greatest in dilute solutions, and the osmotic pressure of dilute solutions is therefore comparatively greater than that of more concentrated solutions. The ratio between the observed and calculated depression of the freezing-point for dilute solutions of sodium chloride, which was found to approach 2.0, is, then, due to dissociation, of a large number of the molecules—in a 0.2 gram-molecular solution, 85 to 90%—into two ions; similarly for sodium sulphate the ratio, approaching 3.0, is due to dissociation of the salt into three ions. In a 0.2 gram-molecular solution of sodium sulphate about 60% of the salt exists in

an ionic condition. Only electrolytes undergo dissociation in solution; sucrose, glucose and alcohol are non-electrolytes, and their effect upon the freezing-point of water is normal. A gram-molecular solution of such a non-electrolyte freezes at —1.86° C., and the osmotic pressure is equal to 22.4 atmospheres, or 17,024 millimeters of mercury. The molecular weight of sucrose is 342, and a gram-molecular solution of sucrose containing 342 grams of sucrose in each liter, measured at 0° C., freezes at —1.86° C. A sucrose solution freezing at —0.56° C., and therefore isotonic with blood serum, will contain $\frac{342 \times 0.56}{1.86}$ *i. e.*, 103 grams per liter. It follows that the osmotic pressure in millimeters of mercury of a solution of any strength can be calculated if the amount of the depression of the freezing-point is determined. If a 1% solution of sucrose freezes at —0.052° C., then the osmotic pressure will be $\frac{0.052 \times 17024}{1.86} = 475$ millimeters of mercury. The osmotic pressure of a solution depends, then, upon two factors (1) the molecular concentration of the solution, and (2) the amount of dissociation of the substance or substances in solution. A theoretical determination of the osmotic pressure, except in the case of some non-electrolytes, is not practicable, and the comparatively simple method of determining the depression of freezing-point must be relied upon.

Physiological Considerations.

In the animal body the cells are living units, which are bathed in a fluid of fairly constant composition from a physical point of view. Lymph, which exudes from the capillary blood-vessels, and, after serving its purpose of conveying nutriment and removing waste, rejoins the blood stream, is, so far as this paper is concerned, similar in composition to blood plasma—that is, blood minus corpuscles. Lymph and blood plasma may be looked upon as the natural media in which the cell units perform their functions. When blood and lymph coagulate a change takes place in the protein content, but the liquid serum that separates has, from the point of view under consideration, practically the same properties as the uncoagulated medium. Blood serum is, then, the mother-liquid of the animal body; it contains about 0.85% of inorganic salts and about 8% of proteins. When fresh blood corpuscles are immersed in blood serum they naturally retain their size and shape; this is also the case if the blood serum be replaced by solutions which are isotonic with blood serum. Solutions which have a lower osmotic pressure than blood serum are called "hypotonic," and those with a higher osmotic pressure "hypertonic" solutions. The former, as has been shown, will hemolyze the corpuscles, since water will enter the cell, and before equilibrium can be established the external wall of the corpuscle will be ruptured, the freed hemoglobin dissolving to form a red solution. In a hypertonic solution the corpuscles will shrink and settle to the bottom of the vessel, leaving a colorless supernatant liquid. These respective solutions will exert a similar action upon the cells forming the tissues of the body; clearly, therefore, all liquids injected into the blood stream or into the tissues ought to possess the same osmotic tension as the blood serum—in other words, they should produce no change in the blood or tissue cells by osmosis. The freezing-point of normal human blood serum is —0.56° C., and for all mammalian blood the depression in the freezing-point is constant, except for slight variations due to diet and other circumstances. An isotonic solution of any substance will, in the pharmacological acceptance of the word, be a solution that has the same osmotic tension as the blood; it will therefore have a freezing-point of —0.56° C.

Normal Saline Solution.

Normal saline solution is the most familiar example of an isotonic solution. This is strictly a solution of sodium chloride containing 0.91 gram NaCl dissolved in 99.09 grams of distilled water; such a solution freezes at —0.56° C. The accepted strength of normal saline solution has varied from 0.6 to 0.91%. The former figure gained credence from the use of frog's blood as the indicator of osmotic pressure, and, though correct for frog's blood corpuscles, it lakes human blood. Normal saline solution is employed, often in large quantities, for intravenous, subcutaneous and rectal injection to replace liquid lost from the body during hemorrhage or acute diarrhea, or to dilute the body fluids, and, by promoting diuresis, assist the removal of toxic substances. It is also largely used in abdominal surgery to wash out the peritoneal cavity. The intravenous injections are frequently followed by a rise of temperature, which has recently been attributed to bacterial contamination of the water used; the fever occurs even when the liquid is sterile, and is probably due to the presence of bacterial bodies of derivatives of bacterial proteins which can not be destroyed by sterilization. The statement in the Codex that normal saline is preferably made with tap water which contains traces of calcium and potassium salts will no longer hold good, and a probable refinement of the near future will be the use of freshly distilled water collected without exposure to air for the preparation of all solutions intended for intravenous injection. Normal saline solution, even though it has the same osmotic pressure as blood serum, is not an adequate substitute for the latter, since blood serum contains, in addition to sodium chloride, potassium, calcium and magnesium in combination with hydrochloric, sulphuric and phosphoric acids. Ringer showed that calcium and potassium were essential to the life of the organism, and Ringer's solution, containing sodium, potassium and calcium chlorides with sodium bicarbonate, is often used in place of normal saline solution. Ringer's solution, made according to the generally accepted formula incorporated in the Codex, has a freezing-point of —0.58° C., and is slightly hypertonic; the quantity of sodium chloride should be reduced and the solution made according to the formula below:

Sodium chloride	0.88 gram.
Potassium chloride	0.025 gram.
Calcium chloride	0.02 gram.
Sodium bicarbonate	0.015 gram.
Distilled water to	100 mm.

This solution has a freezing-point of —0.56° C., and is exactly isotonic with normal blood serum.

Atlantic sea-water, sterilized and diluted to isotonicity, within the last few years has been used to a considerable extent in the place of normal saline solution. The great reaction often following its use is no doubt attributable to irremovable proteins.

Artificial Serums.

In addition to sodium chloride, certain other substances and a number of complex saline solutions, mainly of French origin, have been recommended for intravenous or subcutaneous injection. Some of these solutions are approximately isotonic, but the so-called Trunecek's serum and Cheron's serum are very hypertonic. The accepted formula for Trunecek's serum is as follows:

Sodium chloride	4.92 grams.
Sodium sulphate	0.44 gram.
Sodium phosphate	0.15 gram.
Sodium carbonate	0.21 gram.
Potassium sulphate	0.40 gram.
Distilled water to	100 mm.

This solution has a freezing-point of —3.29° C. and an osmotic pressure 5.875 times greater than blood serum. Cheron's

serum is made according to the formula below:

Sodium chloride	2 grams.
Sodium sulphate	8 grams.
Sodium phosphate	4 grams.
Distilled water	100 grams.

Sometimes 1 gram of phenol is added for every 100 grams of water. This solution is very strongly hypertonic, but it deposits crystals of sodium phosphate before it freezes, and the exact osmotic pressure, therefore, can not be determined in the usual manner. When a few drops of defibrinated blood are added to Cheron's solution made with phenol the mixture deposits slowly a muddy, reddish-brown precipitate, and after an interval of six to eight hours no corpuscles are visible under the microscope. The solution made without phenol causes the blood corpuscles to shrink, but no precipitate is formed, and the blood corpuscles are clearly visible under the microscope after an immersion of twenty-four hours. A strong protest must be made against the application of the name "serum" to any strongly hypertonic solution such as the above.

A solution of pure glucose has been recommended for subcutaneous injection as a restorative after severe operations. Diabetic coma is treated by the intravenous injection of a solution of sodium bicarbonate, and various other salts in isotonic solution have been recommended and are in frequent use. It is unquestionably of the utmost importance that all such solutions which are injected in large quantities should be in an isotonic condition, and in consequence of the impossibility of calculating the required strength from the molecular weight of any salt which ionizes in aqueous solution a number of freezing-point determinations have been made. In the table below the figures in column A indicate the number of grams of the salt which must be used to make 100 grams of solution. In column B the figures indicate the number of grams required to make 100 millimeters of solution measured at 15° C.:

—	A.	B.
Glucose (Merck)	5.00	5.10
Sodium bicarbonate	1.32	1.35
Sodium bromide	1.75	1.77
Sodium diphosphate	2.60	2.64
Sodium phosphate	4.45	4.53
Sodium sulphate	4.00	4.07
Calcium chloride (anhydrous)	1.17	1.18
Calcium lactate	4.25	4.32
Magnesium sulphate	6.15	6.35
Potassium chloride	1.11	1.12
Potassium sulphate	2.07	2.11
Borax	2.85	2.89
Phenol	2.93	2.94

Sodium carbonate has been recommended for intravenous injection in diabetic coma instead of sodium bicarbonate. A 3.4% solution (weight in weight) of sodium carbonate has the same osmotic pressure as blood serum, but the blood corpuscles are quickly hemolyzed in a solution of this strength. This effect is due to the alkaline nature of the carbonate, and it therefore appears that the bicarbonate should always be used. During the sterilization of a solution of sodium bicarbonate, a certain amount of carbonate is formed, but experiment proves that when an isotonic solution of the bicarbonate is boiled gently for ten minutes, only about 15% of the bicarbonate is converted into the carbonate.

Salvarsan.

The intravenous injection of Salvarsan is preferred by the majority of physicians to the intramuscular and subcutaneous methods of administration. The manufacturers direct that a faintly alkaline solution for intravenous injection shall be prepared by first dissolving 0.6 gram of Salvarsan in 30 or 40 millimeters of sterile distilled water, then adding a quantity of a 15% solution of purified sodium hydroxide equivalent to 0.1962 grams of sodium hydroxide, the mixture finally being made up to 300 millimeters by the addition of a sterile 0.5% solution of sodium chloride made with distilled

water. A solution made strictly according to these directions is hypotonic, and a 0.78% solution of sodium chloride must be used in order to produce a prefectly isotonic injection. If the injection is made according to the method described by Tawell (*P.J.* [4], 33, p. 877) for 0.6 gram Salvarsan, it is convenient to use 17.9 millimeters of a 10% solution (weight in volume) of pure sodium hydroxide, followed by N/1 HCl, until the mixture is only faintly alkaline, and then sterile distilled water to make up the volume to 300 millimeters. Tawell, in his original paper, recommended the use of 8 millimeters of a 15% solution (weight in weight) of sodium hydroxide, but this figure was calculated for an injection which would contain 0.5% of sodium chloride, in accordance with the manufacturers' directions.

Solutions for Infiltration Anesthesia.

A method of producing local anesthesia for operation purposes was introduced by Schleich under the name of infiltration anesthesia. A considerable quantity, sometimes as much as 200 millimeters, of a solution is injected through a hypodermic needle around the track of the nerves which supply the part. All solutions injected in this way must be made isotonic by the addition of sodium chloride, otherwise destruction of the tissue cells, followed by necrosis and sloughing, may occur. Solutions of cocaine were formerly recommended, but salts of the less toxic beta-eucaine and novocaine are now almost exclusively used. Either the hydrochloride or the lactate of beta-eucaine may be used; the lactate possesses the advantage of being much more soluble than the hydrochloride. A solution containing 4.52% (weight in weight) of beta-eucaine lactate has the same osmotic pressure as blood serum, but the solution commonly used for infiltration does not contain more than 0.2% of beta-eucaine, and is made isotonic by the addition of sodium chloride. When beta-eucaine lactate is used, a little more sodium chloride is required than is the case with beta-eucaine hydrochloride. Solutions made according to the following formulæ are isotonic:

Beta-eucaine lactate.....0.20 gram.
Sodium chloride.....0.87 gram.
Distilled water to..... 100 mm.

Beta-eucaine hydrochloride....0.20 gram.
Sodium chloride.....0.82 gram.
Distilled water to..... 100 mm.

Novocaine — A 5.07% (weight in weight) solution of novocaine is isotonic. For infiltration anesthesia 0.25% and 0.5% solutions are used, and for anesthesia of the nerve trunks a 2.0% solution is recommended. In the three formulæ given below the sodium chloride is in sufficient quantity to make the solutions isotonic:

Novocaine .....0.25 gram.
Sodium chloride.....0.87 gram.
Distilled water to..... 100 mm.

Novocaine .....0.50 gram.
Sodium chloride.....0.82 gram.
Distilled water to..... 100 mm.

Novocaine ..... 2.0 grams.
Sodium chloride..... 0.5 gram.
Distilled water to..... 100 mm.

Adrenine is usually added to solutions employed for infiltration anesthesia; since it is a powerful capillary hemostatic, it delays the local circulation and so prevents absorption of the anesthetic. The proportion in which it is added, about 1 in 200,000, is so small that the osmotic pressure produced is neglible.

Hypertonic Solutions.

Hypertonic solutions are employed in some special conditions. In cholera there there is a great loss of fluid and of salts from the body, so that the normal proportion of corpuscles to blood serum may be much disturbed. Striking remedial effects have been obtained in this condition by the intravenous or subcutaneous injection of a solution of sodium, potassium and calcium chlorides, having an osmotic pressure about one and a-half times that of blood serum. The tendency of the hypertonic solution is in such cases to check further loss of fluid from

the blood. Similarly, a 5% solution of glucose in normal saline solution, injected subcutaneously, is found of great service in acute summer diarrhea. This solution has an osmotic pressure twice that of blood serum. Rectal injections that are required to be absorbed should be isotonic, otherwise they tend to increase in bulk by extracting liquid from the epithelial cells; rectal injections that are to be evacuated may be hypertonic. Hypertonic solutions of magnesium sulphate have recently been injected subcutaneously for rheumatism and intraspinally for tetanus; probably isotonic solutions would be equally effectual and, when given subcutaneously, less painful.

Hypotonic Solutions.

Whilst solutions for intravenous injection should always be isotonic, a little more latitude may be allowed in the case of solutions which are to be injected subcutaneously or intra-muscularly in small quantities. If not isotonic, these solutions should be hypotonic rather than hypertonic, as they then mix more readily with the lymph, and are carried off more quickly by the lymph circulation. Solutions which are hypotonic in the strength required may be rendered isotonic by the use of sufficient sodium chloride, or if this involve decomposition, by the addition of glucose.

Two of the hypodermic injections of the British Pharmacopœia—apomorphine and morphine—are hypotonic, the remaining two—cocaine and ergot—are hypertonic, the latter being very strongly hypertonic on account of the sodium chloride which is formed during the preparation of extract of ergot by the pharmacopœial process. The hypodermic injection of apomorphine can be made isotonic by the addition of 0.055 gram of sodium chloride or 0.3 gram of pure glucose for every 10 millimeters of solution. Sodium chloride is unsuitable for addition to the hypodermic injection of morphine—morphine hydrochloride tends to crystallize—but the injection can be made isotonic by adding 0.268 gram of pure glucose for every 10 millimeters of solution.

A solution of cocaine hydrochloride containing 0.594 gram of the alkaloidal salt in every 10 millimeters is isotonic; the official hypodermic injection contains 1.0 gram in 10 millimeters.

Among other substances used for hypodermic injection, quinine bihydrochloride and strychnine hydrochloride are important. A solution containing 0.565 gram of quinine bihydrochloride in 10 millimeters is isotonic. A 1% (weight in volume) solution of strychnine hydrochloride is strongly hypotonic; it can be made isotonic by the addition of 0.079 gram of sodium chloride or 0.442 gram of pure glucose to every 10 millimeters of solution.

The treatment of tuberculous disease by the subcutaneous injection of small doses of new tuberculin is largely practiced. For this purpose the new tuberculin is diluted with a 20% glycerin solution or with normal saline. Preference should be given to the latter diluent, since a 20% solution of glycerin is very strongly hypertonic. An isotonic glycerin solution can be made by diluting 1.75 millimeters of glycerin with sufficient water to make 100 millimeters. A solution containing 0.25% (weight in volume) of phenol is also used for diluting vaccines and tuberculins. This can be made isotonic by the addition of 0.83% (weight in volume) of sodium chloride.

Solutions for Intra-Spinal Injection.

The osmotic pressure of cerebro-spinal fluid is rather higher than that of blood serum, its freezing-point being —0.585° C. Solutions for injection into the cerebro-spinal canal should be isotonic with the cerebro-spinal fluid in order that no physical action may be exerted upon the cells. It is, however, usually desirable to localize the action of anesthetic substances injected into the canal to some particular region of the spinal cord; for this purpose solutions of higher specific

gravity than the cerebro-spinal fluid and of low diffusibility are desirable. Stovaine in 5% (weight in weight) solution is the most popular substance for producing spinal analgesia, and glucose is usually added to the solution to increase the specific gravity, though at the same time it increases the osmotic pressure. Theoretically, a better addition for the purpose is dextrin, which is a colloid substance having a negligible osmotic pressure, and therefore a very low diffusibility. A 5% (weight in weight) solution of stovaine has a freezing-point of —0.585° C.; its osmotic pressure is therefore very nearly the same as that of blood serum, but owing to some chemical action on the part of stovaine the blood corpuscles are quickly hemolyzed when a drop of defibrinated blood is mixed with a solution of stovaine.

General Considerations.

Hitherto the isotonicity of a solution has been considered of importance only when the solution is intended for injection directly into the circulation or into the tissues of the body. The principle, however, might be advantageously extended to solutions intended for application to wounds, both superficial and deep, and in all cases where the surface has been deprived of its epithelium and the underlying tissues are laid bare, isotonic applications are desirable. The tissues are normally bathed in lymph, hence when any liquid is applied to such surfaces it should be so constituted that all harmful osmotic action is avoided. This precaution would favor normal processes and hasten healing. On the other hand, hypertonic local applications are an advantage when the conditions require an increased lymph circulation at the seat of disease, as in the case of many chronic ulcerations.

The lacrimal secretion is a water-clear slightly alkaline fluid with a salty taste. According to published analyses, the secretion contains 0.5% of albumin and 1.3% of sodium chloride. It is a matter of common observation that both distilled water and sea-water irritate the conjunctival mucous membrane, the one being hypotonic and the other hypertonic. A determination of the freezing-point of the various solutions used for eye lotions would make it possible to devise formulæ for isotonic applications, and the authors hope to make a further communication on these lines. Isotonic nasal washes can be prepared with the help of the figures already given. Liquids for irrigating the bladder should be isotonic or somewhat hypertonic. Attention has been directed to two substances, viz., sodium carbonate and stovaine, which cause hemolysis of the blood corpuscles even when made into solutions possessing the same osmotic pressure as blood serum. Other substances are known which also cause the hemoglobin to be discharged from the corpuscles; ether, chloroform, amyl alcohol, alkalies, soaps and saponins are well-known examples, and probably there are many others. Before deciding that a solution of a new substance for injection in quantity, it is, therefore, advisable, after determining its isotonicity, to add to the solution possessing the same freezing-point as blood serum a little freshly-shed defibrinated blood; observation under the microscope will then reveal the action, if any, exerted by the solution upon the blood corpuscles.

The paper was illustrated by a number of practical experiments, carried out under the direction of the authors.

Discussion.

The President said it was evident that an immense amount of work had been put into the paper, and it would need to be read carefully to understand it thoroughly. There was evidently a great deal in pharmacy and medicine which trenched upon the subject-matter of the paper. He congratulated the authors on the result of their research, and thanked Mr. Bennett for the concise manner in which he had placed the subject before the meeting.

Mr. Horace Finnemore, called upon by the President, said that he had greatly appreciated the clear exposition of this subject by Mr. Bennett. He thought it was a topic eminently suitable for presentation before a pharmaceutical audience. He raised a question as to the isotonicity of a solution containing 1 grain of morphine acetate in 12 minims, which is in use at Guy's Hospital, instead of the pharmacopæial injection of morphine tartrate.

Mr. Edmund White said the authors had referred to the fact that it was very desirable that wounds should be washed with normal saline solution. Mr. Jennings would bear him out when he said that that had been done at St. Thomas's Hospital for eight or ten years. It looked as though some of the other hospitals represented that evening were behind the times. (Laughter.) He thought the subject of this paper was one which was going to be studied in the future, and there was a need for pharmacists to be kept informed as to what was going on. He dared say the matter could be carried to excess, like many similar subjects, and as a fact the logical conclusion of the paper was that they should not drink anything but isotonic solutions, and perhaps the authors could tell them how much salt ought to be added.

Mr. R. Fouracre asked how much water was lost when the authors boiled the sodium bicarbonate solution for ten minutes.

Mr. E. M. Holmes directed attention to a specimen of allantoin presented by Dr. W. H. Martindale, which was on view in the Examination Hall. Allantoin was a principle unknown in comfrey root until quite recently. He presumed that allantoin would have to be used in isotonic solution.

Reply to Discussion.

Mr. F. W. Gamble, in replying to the discussion, said that in regard to Mr. Finnemore's question concerning the strength of an isotonic solution of morphine acetate, a 10% solution of morphine tartrate was approximately isotonic, and as morphine acetate would have rather a higher osmotic pressure than morphine tartrate, the one in twelve solution, which he thought was what Mr. Finnemore meant, and not 12%, would not be far out. In regard to part of Mr. White's remarks, it was not so much a question of adding sodium chloride as adding less whisky. Alcohol was one of those substances not an electrolyte, and therefore its osmotic pressure was proportional to its molecular weight. He thought a 3% dilution of whisky made an isotonic solution. In regard to the question respecting sterilizing solutions, Mr. Bennett had boiled the solution of sodium bicarbonate for ten minutes in order to see how much bicarbonate was changed into carbonate. Mr. Holmes had referred to allantoin. This was one of those substances which had come into use lately, and which was having a boom. As allantoin was probably not an electrolyte, it would be quite easy, after reading the paper, for anyone to see how to make an isotonic solution of allantoin.

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UNMAILED LETTERS.

Gibbs—"My wife explored my pocket last night."

Dibbs—"How did she come out?"

Gibbs—"As an explorer should. She acquired enough material for a lecture." —*Boston Transcript.*

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QUITE SATISFACTORY.

An old colored barber is responsible for this gem: When asked if he favored the abolition of capital punishment, he replied: "No, sah, I don't. Capital punishment was good enough fo' my fo'-fathers, an' it's good enough fo' me.— *Boston Transcript.*

CURRENT MEDICAL LITERATURE.

ANTRAL LESIONS.

L. H. LANIER, in the *Medical Fortnightly*, points out that these lesions furnish an opportunity for co-operative efforts in their cure by the dentist and specialist in nasal affections.

The cavities in the superior maxillary bone anatomically shows many peculiarities favorable to the origin of morbid processes. The large size of the antrum with its one opening so situated as to make the chamber suited for fluid retention, the small size of the opening renders it easy to occlude by the slightest hyperemia of the investing membrane or encroaching growth.

The floor of the antrum shows conical projections from fangs of a varying number of the upper teeth, or it may be penetrated by them.

This close relationship of teeth and antrum, especially where the extraction of a tooth has given free buccal communication to the antral cavity is an important factor in the etiology of many morbid conditions; in fact, too much importance can not be attached to the teeth as an etiological factor in antral lesions, and rhinologist and dentist alike should possess a thorough knowledge of these structures and their relation to the antrum.

The posterior dental vessels and nerves traverse the floor of the cavity to their respective distributions; often branches of the superior dental nerve cross along the floor of the antrum, protected only by the thin layer of mucous membrane, lining that cavity. In such cases the slightest inflammatory process or accumulation of fluid will be followed by pain out of proportion to the pathological change in the tissue.

In the diseases of the antrum the discharge will vary according to the position of the patient, and in empyema, when an operation is necessary, the extraction of the first or second molar or any teeth whose roots more nearly reach the antrum is necessary; first, because more than half the cases of empyema are caused by diseased teeth; by ulcerating into the maxillary sinus, or by causing disorder of the nerve and blood supply, by reason of its close proximity; secondly, because according to the law of gravity, better drainage is afforded where the teeth are extracted.

I have, says the author, on numerous occasions received valuable assistance from dentists in treating antral lesions, where the dentist would extract the tooth whose socket would afford best drainage, and with electro-motor dental engine, burrs and drills, remove sufficient of the alveolar process to afford ample drainage.

I shall mention a case to emphasize the necessity for co-operation between the dentist and physician, as follows: White lady, age thirty, came to my office in 1905 with typical symptoms of empyema of two months' duration. She had tuberculous diathesis, but apparently possessed perfect teeth, and wishing to preserve her teeth I sought to establish drainage through the natural orifice. This was impossible until I enlarged the ostium maxillare and irrigated with warm saturated solution boric acid. The relief was temporary because nasal chamber was unusually narrow, caused by enlarged turbinates and deflected septum. I then made an artificial opening through the lateral wall of the inferior meatus and irrigated the cavity. This gave her great relief for several months, but did not cure her. This opening can be made with knife, curved trocar and cannula, or the antrum drill.

I then had a dentist extract a tooth and drill through the canine fossa. We

curetted, owing to localized areas of granulation tissue and irrigated with saturated solution boric acid, following by permanganate potassium, 1-4000, twice in twenty-four hours; packed with antiseptic gauze and dispensed with drainage tubes, which clog up and are constant source of irritation. By plugging with gauze the cavity can be rendered aseptic and kept in that condition. Insufflations of aristol and boric acid followed irrigation. The patient made a rapid recovery following the last operation.

Transillumination is frequently of diagnostic value. It also furnishes a guide in opening into the antrum in atypical cases, since in at least 30% marked irregularity exists due to altered anatomical conditions.

MEDICAL TREATMENT OF TUBERCULOSIS PERITONITIS.

André Philibert, discussing this subject in *Progrès médical,* states that codliver oil is useful in tuberculous peritonitis, provided it is well borne; in many instances, however, especially in the summer, it is not tolerated and must be given up. Repugnance to the use of the oil may often be overcome by beginning with very small doses, then gradually increasing them until five or six tablespoonfuls are taken every morning. The oil is indicated especially when constipation is present. In periods of diarrhea, however, tannin, particularly combined with iodine in a syrup, is very useful; where tannin preparations are not well borne, tincture of iodine should be given with milk, or, as recommended by Durante, the following solution may be administered by hypodermic injection:

Iodine	0.25 gram.
Potassium iodide	2.50 grams.
Guaiacol	1.25 gram.
Glycerin (pure, neutral)	25.00 grams.

One-quarter, gradually increased to one c.c. is to be injected daily.

The guaiacol is said to prevent pain at the time of injection. For benefit to be produced this treatment must be continued a month or two.

Another useful drug is calcium phosphate, which antagonizes both sweating and diarrhea, and may be given either in cachets in the form of glycero-phosphates or tricalcium phosphate, or else in solution as monocalcium phosphate.

Arsenicals, such as cacodylates and Fowler's or Pearson's solutions, are useful in sluggish, afebrile forms of the disease; in cases with diarrhea and fever they are contraindicated.

In general, drug medication is, perhaps, preferably to be avoided in tuberculous peritonitis whenever possible, in order to spare the digestive tract. Certain attendant symptoms, however, may require special measures. Thus, pain may require the use of an ice bag, or better, heat or alcohol compresses; rarely of opiates. Mild constipation indicates glycerin or oil enemas, or suppositories. If it proves persistent, it is best to alternate the enemas with small doses of castor oil, or sometimes of sodium or magnesium sulphate or some laxative mineral water. In the presence of diarrhea, tricalcium phosphate is valuable. If there are colicky pains in addition, paregoric or other opiates may be given, as flatulence is present or absent. Where obstinate, copious diarrhea is noted, tannin, krameria, or bismuth are suitable. Tannin and calcium phosphate are both advantageous in that they may be given for long periods without harm. Vomiting should be treated by means of a fluid diet for a few hours, ice internally, and applications of cold to the epigastrium.

Regarding paracentesis in ascites, Philibert states that it has undoubtedly in some cases overcome the tendency to intraperitoneal effusion. An ascites which is only slowly being resorbed may not return after a simple paracentesis, or at least, it may subsequently be only partially reproduced. While persistence of ascites and high tension of the fluid are both indications for evacuation by puncture, they must also be considered as

strongly suggesting the performance of laparotomy.

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NEO-SALVARSAN.

The *Medical Era* publishes the following letter to Dr. A. O. Zwick, of Cincinnati, Ohio, and Professor Paul Ehrlich:

"Paul Ehrlich Street No. 44, Frankfort-on-the-Main, March 9th, 1912.

"HERRN PROFESSOR A. O. ZWICK, Cincinnati:

"*Sehr geehrter Herr Kollege*—Herewith I take the liberty of courteously informing you that I have, after many efforts, succeeded in transforming salvarsan by means of sulfoxylates into a form that is easily soluble in water. This salvarsan, which is designated as 'Neosalvarsan' by the Farbwerke, formerly Meister Lucius & Bruening in Hoechst-on-the-Main, dissolves in water with the utmost ease, with a perfectly *neutral* reaction. The preliminary clinical tests of Neosalvarsan were made by Herrn Direktor Dr. Schreiber, physician-in-chief of the Municipal Hospital, Sudenberg in Magdeburg, whose observations, in a brief form, I add. It results from these that Neosalvarsan (the new salvarsan), as far as its remedial effects are concerned, is not second to salvarsan, but, on the contrary, rather surpasses them, and is exceedingly well borne. In the use of Neosalvarsan diarrheas and vomiting, occurring as they sometimes do following the employment of salvarsan, have not been observed, even when very large doses were given. Up to the present, Neosalvarsan has been used intravenously; whether the intramuscular exhibition is applicable, needs further study.

"Neosalvarsan is to be dissolved *cold* in freshly-distilled sterile water or in its absence in water that has been thoroughly boiled. The solutions are to be used directly after being prepared and may not be kept.

"If you were inclined to experiment with the new preparation, I request you to kindly inform me and I shall then immediately cause you to be supplied with packages corresponding to 0.3, 0.4, 0.5 and 0.6 grammes of salvarsan.

"I would be under obligation to you if you would keep me informed currently as to the results of your investigations and all observations which you may make with the new preparation, and if you would, upon the conclusion of your experiments, send me in a detailed report.

"With the best recommendations in vorzueglicher Hochachtung,

"Your most devoted,

"PAUL EHRLICH."

Dr. Schreiber, mentioned above, in connection with the new preparation, writes as follows: "Neosalvarsan is very easily soluble in water. To prepare the solutions none but freshly distilled and sterilized water must be used. The employment of sodium-chloride solution is expressly forbidden, because it causes cloudiness; moreover, the toxicity of the preparation is apparently increased by the use of sodium chloride. Nor is neutralization by means of caustic soda necessary as was formerly the case for old salvarsan, the reaction of the new solution being absolutely neutral. Its preparation takes place in the same manner as for old salvarsan. It is our practice to dissolve approximately 0.15 grammes in 20 c.cm., 1.5 grammes of the preparation in 200 c.cm. and intermediate doses in corresponding amounts of water.

"Our maximum single dose in the case of adult males has been 1.5 grammes Neosalvarsan (equal to 1.0 gramme salvarsan) and for women 1.2 grammes; in the case of children our dosage has ranged according to age from 0.15 gramme to 0.35 gramme.

"We now give injections four times in succession with one day's intermission between each. If after two weeks the Wassermann reaction still continues positive, then we combine the patients in groups that are treated monthly under control of the Wassermann test.

"As a precautionary measure in early meningitis cases it should be noted that great care in the use of the preparation is necessary in all cases in which the patients complain of headache, it being necessary to begin treatment in all such instances with very small doses.

"For intramuscular injection we have dissolved 0.9 grammes Neosalvarsan (corresponding to 0.6 gramme salvarsan) in about 30 c.cm. of water. Previously we had injected a few c.cm. of novocaine solution. Then we allowed the needle to remain in place and after several minutes we inject the Neosalvarsan solution through the same needle. But it is absolutely needful that the injection be made completely intra-muscularly as subcutaneous injections cause infiltrations.

"All in all we have treated 269 patients. The general impression gained has been that the new preparation is better supported than old salvarsan; for only twice have we observed, even in the case of these large doses, slight attacks of vomiting and diarrhea, manifestations that passed, however, in the course of a very few hours. Precisely as in the use of old salvarsan in cases showing an abundance of spirochetæ some slight degree of fever is observed after the first injection, which, however, does not recur after repeated injections. In three patients we observed on the tenth day the exanthematous phenomena sometimes following the use of sera. In passing, however, I must remark that these latter, I am certain, have nothing to do with the preparation, but must be considered to have some other cause. Neuro-recurrences have not been observed by us to date after the use of the preparation, although we have now treated cases with it since October.

"I gladly place myself at the disposal of my colleagues for any further information they may desire.

"(Signed) DOCTOR SCHREIBER

"Direktor of Magdeburg-Suddenburg Hospital."

TREATMENT OF ACUTE SUPPURATIVE OTITIS MEDIA.

G. H. Ward, in the *Journal of the Medical Society of New Jersey*, states that if this condition is seen in the early stages attempts to abort it may be followed by success. Irrigations with at least one quart of hot normal saline solution, at a temperature below 110° F. and with little or no pressure, is the first step. The patient should be kept in bed, on a light diet, and small doses of calomel given, followed by a saline. In older children and adults the author has used the following local treatment with success in many cases: Saturate a long pellet of absorbent cotton with 1 to 5,000 adrenalin chloride solution, add a few drops of 2% cocaine solution, squeeze fairly dry, and insert by means of an applicator with curved tip along the floor of the nose to the nasopharynx, pressing upward and outward to the pharyngeal opening of the Eustachian tube. Examine the nasopharynx with a mirror to see that the cotton is in apposition, then leave it *in situ* for five minutes. This procedure will often open the tube sufficiently to drain the tympanum, and, in conjunction with heat, may produce resolution. The nasal and nasopharyngeal cavities should be cleansed frequently with warm saline solutions; weak Dobell's solution answers the purpose well.

If the process continues in spite of the measures taken to abort it, bulging of the drum results and a paracentesis is indicated. In infants and young children the efforts to abort should be limited. In these cases the author believes paracentesis should be practiced where high temperature and a discolored drum are present, without waiting for bulging.

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SHOP ASSISTANT (to purchaser of widow's bonnet)—"Would you like to try it on before the glass madam?"

Customer—"No thank you, miss, it ain't for me. I wish it was."—*Stray Stories.*

THE SICK ROOM.

THINGS TO NOTICE IN THE CARE OF THE SICK.

(Continued.)

Counting the Respiration.

ONE should never let the patient know when the respiration is being counted, as he will unconsciously either hold his breath or breathe faster.

A convenient way to count the respirations is immediately after taking the pulse, still holding the fingers about the wrist of the patient, making him believe that you are still counting the pulse. Our respirations are readily influenced when our attention is called to them. Not only the number but also the character of the respirations should be recorded. Deep or shallow, free or painful, loud or quiet.

All these facts are for the information of the doctor when he comes. The trained nurses have charts to be filled out so that the important facts about the condition of the patient are before the doctor.

But even the home nurse will soon find the importance of all the things that have been mentioned. If the patient is very sick, there are other things that will be found significant.

Observe the Position of the Patient.

The patient occupies a certain position not only at will, but because he finds more comfort in one than in another. Patients suffering from peritonitis will prefer, or rather be compelled, to lie flat on their backs with knees drawn up to relax the abdominal muscles and relieve the intra-abdominal pressure.

A patient with pneumonia prefers to lie on the affected side to give the opportunity for the healthy lung to expand more freely and substitute the deficiency in oxygen caused by impaired function of the inflamed one. Very ill patients, unconscious, in a comatose state, lie on the back continually, thus favoring a congestion of the posterior portions of the lung, causing what is known as hypostatic pneumonia, and also a congestion of the skin on the back facilitating the formation or development of bed sores. In such cases the nurse should see that the patient be turned repeatedly from one side to another, thus trying to equalize circulation.

Is There Nausea?

Another symptom to be mentioned on record is nausea, or vomiting. Is the nausea a constant symptom, or does it occur only occasionally after taking food or medication? The quantity and character of the vomit is to be noted. The color, is it green, red or blackish—coffee-ground vomiting? Is the vomiting hard after considerable retching, or easy without nausea, so-called projectile vomiting frequently observed in meningitis or brain diseases?

The Question of Food and Water.

It is of importance to the physician to know the quantity of food consumed by the patient, and the laconic words on the sheet, like "breakfast," "dinner," and "supper," are too mute to be appreciated. It shall be minutely stated how much of the food the patient takes. Has he taken it readily? Did it appeal to his palate? Did he reject it on account of the lack of appetite? Or did a certain dish not appeal to him?

When we speak of food we include also water, and it is of importance to know the number of ounces of fluid of all kinds consumed by the patient in twenty-four hours.

The location and character of the pain ought to be marked down, no matter how trivial and unimportant it may appear to be. Even a temporary passing pain

has significance, and the patient may easily forget to present it to the doctor on his next visit.

The expression of the patient's face must be carefully watched. Is it pale or flushed; is it red or has it a bluish hue; cyanotic, indicating deficient oxygenation of the blood; is it quiet, contented or anxious? Is the patient dull and apathetic, not taking interest in his surroundings? All these changes have their interpretation and significance.

The Significance of Cough and Expectoration.

Is the cough painful, unproductive, or easy and accompanied by expulsion of mucus; and the character of the mucus? Its color; its consistency. It can be frothy and watery, rusty, adhering to the vessel. It may be the color of prune juice in the first stages of pneumonia; or if the odor is offensive, as in gangrene of the lung. Or it may have the appearance of pus, and come up in large quantities during fits of coughing, as is observed in cases of abscess of the lungs. It may be bloody or only streaked with blood.

The sputum ought to be collected in special sputum jars, which are to be emptied frequently and kept antiseptically clean. It is advisable to keep these jars closed, not to contaminate the air of the sick-room by dried-up particles of mucus, and on the other hand preserve the specimen in an unchangeable state, as it is produced by the patient for laboratory examinations.

Very ill patients should be helped during the attacks of coughing, and the receptacle be brought to them to collect the expectoration. By no means allow the patient to raise himself and bend over in bed to get the jar or expectorate in a vessel placed near the bed.

Sleep of the Patient.

"Slept well; slept fairly well; slept little." What does it all mean? Very indefinite information indeed. Is the sleep quiet and restful, refreshing, or does the patient sleep all night and wake up still more tired than before he went to bed? Does he quickly fall asleep, or does he sleep for a short while and then remain awake for a few minutes, an hour or two, to drop off again to sleep?

Notice if there is any twitching of the muscles during sleep, muttering, or any sign of delirium. The kind of delirium must be noted. Is it quiet or noisy, muttering, picking at bed clothes, or at imaginary objects, or violent? If so, at what time?

It is quite frequent that the patient appears rational during the doctor's visit, while at other times he may be quite delirious. Even the mildest forms of delirium have great significance, and such patients must be watched very carefully and not to be trusted. The most terrible accidents occur during the few moments when the nurse leaves a delirious patient alone, stepping out into another room, without having somebody relieve her and watch her charge.

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THE VAGINAL DOUCHE.

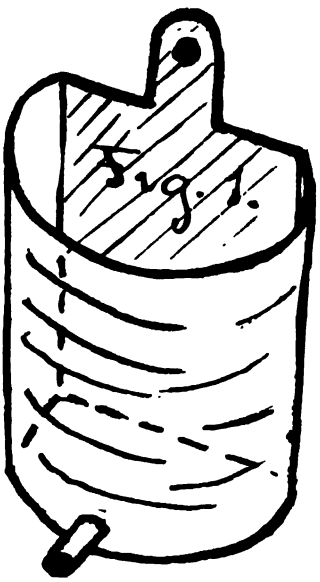
H. D. Fair, M. D., Muncie, Ind.

It has been said that all medical students are well instructed in surgery, which few ultimately practice, while but few thoroughly learn obstetrics, which all practice. Kindly allow me to paraphrase in this way. Nearly all women, earlier or later, particularly those who had the advantages of a high school, academic or college training, learn some system of physical culture which is universally neglected in later life, while not one in a score ever learn to properly administer a douche; yet nearly all perform this office at one time or another, and its importance increases as life advances. For this reason I consider it an important subject.

The tides of even professional opinion regarding the uses and the worth of the vaginal douche ebb and flow as do the tides of the sea; not so frequently, of

course, but none the less surely. I have always been and am now opposed to the routine use of vaginal irrigation. I believe it is practiced many times when it is uncalled for, and is productive of actual harm. A douche has its indications, uses and limitations, so whenever advised by a physician, given by a nurse or taken by the patient herself, the reasons should be apparent; therefore the subject should be considered from five viewpoints, viz.: (1) descriptive, (2) reasons for its use, (3) methods of use, (4) composition of solutions, and (5) therapeutic possibilities.

The word "douche" should never be used without its qualifying modifiers, for



in different localities the word has a provincial significance. To tell each of six women to go home and take a douche might result in six distinct procedures, causing six definite effects. The unqualified word means simply a spray or stream of water or solution directed against an object or part, and is just as applicable when reference is made to the irrigation of the external cutaneous surface as when injection is made into some of the orifices of the body.

The apparatus in most common use is that of an elevated reservoir with a suitable outlet, or a force pump principle, the operation of which produces the same results. For home use nothing is better than a copper or enameled ware can holding from four to eight quarts, fashioned similar to the one illustrated in Fig. 1. This receptacle may be filled and hung at any height necessary to afford the required water pressure. A length of rubber tubing, a stop-cock and several assorted pipes or tips complete the outfit. The tips and coiled tube may be kept in the can when not in use, thus making it a convenient and very satisfactory addition to the armamentarium of any household.

The complete outfit may be purchased from any physicians' supply house or the can may be made by any tinner for a cost ranging from $1.50 to $5.00, according to the size and material. The rubber tube and tips are usually sold at any first-class drug store. A copper can will last a lifetime.

It may be safely assumed that the normal woman who is living a natural life possesses an organism that is automatic, self-repairing, self-adjusting and self-cleansing, and the habit of repeated douching, under such conditions, is detrimental to health and comfort. It washes away the natural secretions, and its continuation may change the functioning and even the structure of the mucosa.

The vaginal douche may be divided into three classes, depending upon whether it is used as a prophylactic, palliative or a cure. While, as I said before, I am not in favor of promiscuous douching, we all know that it is a procedure attended by benefits when needed, and that it *is* necessary at times, even in infancy and childhood.

The purely prophylactic douche is most frequently used to protect the vaginal mucous membrane from becoming infected from disease germs (most commonly venereal) or to prevent irritation that might arise from abnormal secretions from within, or substances from without.

Palliative douches are those given to relieve, temporarily at least, certain symptoms or conditions, while other measures may or may not be employed for the purpose of obtaining permanent results. Certain forms of dysmenorrhea are greatly benefited by a well-selected douche; irritating discharges either specific or non-specific. Inoperable malignant growths often demand a douche, as do other conditions characterized by congestion or inflammation, such as metritis, endometritis or pruritus vulva. It may be used to produce either anemia or hyperemia. The douche may be a curative measure in certain varieties of leucorrhea, gonorrhea, mucus patches involving the vagina or cervix, vaginitis, vaginismus, metrorrhagia, pin worms in the vagina, and it is sometimes necessary as a deodorant.

Every young woman should understand the proper method of douching, whether its use is necessary in her case at that time or not, and above all she ought to learn what sort of a nozzle she may and may not insert into her vagina, for this is the important part of the apparatus. The success or failure of the douche, to say nothing of the convenience or comfort to the user, depends on the style of this attachment. The attitude or posture assumed while using the douche is of major importance also, for with most of the syringe tips on the market and in popular use the recumbent posture is the only position that permits effective work. The ideal arrangement is to have the patient on her back with the hips elevated several inches; that is, when a woman must wait on herself. When she has an assistant, particularly a physician or nurse, the Sims or even the knee-chest position may be the one of election.

Following our line of argument you can now see that the most serviceable apparatus is the one that can be used to advantage while the patient is in the recumbent, elevated-hip position. Whether she is using the douche herself or is being assisted by some one does not enter into the consideration here. If she assumes the position now advised she will most likely be on her bed or on an improvised table, and she does not wish to soil the bedding or covering; therefore we must have a tip or nozzle that will allow sufficient flow and pressure to fully distend the vagina, at the same time providing for the return flow. The most important tips answering this requirement are those having a vulvar shield or vaginal plug with a double perforation; one for the inlet tube and one for the outlet. Some of these are very satisfactory, inasmuch as the woman can handle them herself, and the adjustment can be so arranged that there is no leakage. My preference is for the two tips illustrated in Figs. 2 and 3. The former is for virgins and the latter for multiparous or married women.

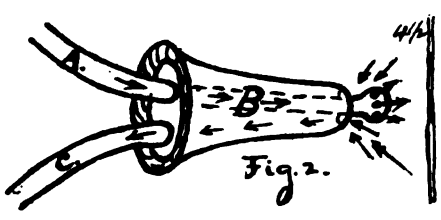


Fig. 2.

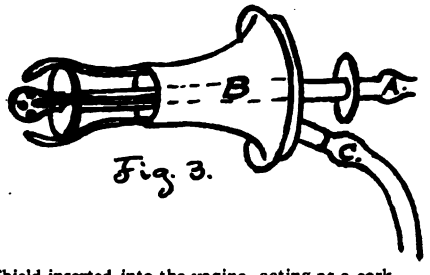


Fig. 3.

A.—Inlet tube coming from the fountain. B.—Shield inserted into the vagina, acting as a cork. C.—Outlet tube, carried over the side of the bed into slop jar.

By closing the stop-cock or by pinching the outlet tube, at the same time leaving the inlet free, any required water pressure may be obtained. In Fig. 3, after the nozzle is inserted, the prongs may be separated by drawing the ring on the inner end of pipe A, closer to the shield. This puts the vaginal walls on a stretch,

allowing all the mucus surface to come in contact with the solution. Other especially designed tips, all more or less satisfactory, are on the market, but the ones I describe have the advantage of being so reasonable in price that they are within reach of all.

Some rubber bulbs are made with the vulvar shield, but they have the disadvantage of holding such a small quantity of fluid, which, to be effective, must be used over and over again often as the valve is worked. For temporary cleansing purposes this bulb might answer the requirements, but when, as frequently happens, it is necessary to administer a douche containing one or more gallons of water, a continuous-flow apparatus must be provided. With the container shown in Fig. 1 this can be easily done by an assistant who keeps the can filled with water till the desired end is accomplished.

When we discuss the composition of the solutions for douche purposes we must take into consideration the temperature of the fluids as well. As the ordinary vaginal mucosa will tolerate a temperature 10 to 15 degrees higher than that which causes pain to the vulva or perineum, the protecting rubber shield on the two tips illustrated make possible a hotter douche than could be used without such protection.

The hot douche has a primary and secondary effect. In inflammatory conditions and congested areas it is the secondary effects we want, and this can be reached only by a protracted stream. This action is frequently illustrated by reference to the hands of the laundress. When she begins her task the hot water causes her fingers to become red and puffed, showing hyperemia; but later the same fingers present a shrunken and wrinkled appearance. Now if we wish to relieve congestion we must continue the douche till the surface treated exhibits the same reaction, which is known as depletion. The warm douche ranges in temperature from 95 to 100 degrees; the hot douche from 100 to 110. There may be times when a temperature of 115 to 118 is advisable. The cold douche I mention only to condemn.

For ordinary purposes plain or salt water is more desirable for douches than is a medicated solution, which should not be used except in specific cases, upon the advice of a physician. The use of poisons like bichloride of mercury is not only useless, but dangerous. If an antiseptic is necessary there are plenty non-poisonous preparations just as effective, lysol and cresol being good examples.

Of course in specific examples the indicated remedy is to be used, and in the manner recommended by the physician.

Permanganate of potassium, the various silver salts, carbolic acid, witch hazel, boracic acid, alum, tannin and many others, each in solution, all have their uses. Probably the most satisfactory deodorant is liquid formaldehyde in the proportion of one teaspoonful to the pint. This is indicated when a foul-smelling discharge due to malignancy or other causes, come from the vagina.

In recapitulation I will mention a few fundamental principles. Care should be taken in the selection and the insertion of the tip or syringe nozzle. A tip that has a perforation in and discharges a jet of fluid from its extreme end should not be used, for the danger of throwing a stream or even a few drops into the uterus, thereby causing uterine spasm or colic, must be avoided.

Pelvic pains due to engorgement, involving the rectum, uterus, its appendages, or the bladder, may be relieved by the hot douche. The spasms of cystitis, and tenesmus from any cause are always benefited and made at least bearable while waiting for the therapeutic results of the indicated remedies.

Last, but not least, *own your own douche apparatus* and never loan it to anybody, except in an emergency where a life may be at stake.

MEDICAL NURSING—LECTURE NO 6.

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Intestinal Parasites.

Before leaving the intestinal canal, we will dwell for a few minutes on the undesirable boarders which house themselves quite frequently in the digestive tube. I mean the intestinal parasites, the so-called worms.

I will acquaint you only with the most frequent forms. We meet the tapeworm, which attains a length of fifteen or twenty feet or more, tenia solium, which is the most frequent type of tapeworm met in this part of the country. It has a head which measures two millimeters in breadth, is square shaped and provided with four large sucking disks. The ripe segments are from seventeen to eighteen millimeters in length and from eight to ten millimeters in width. The worm is met at all ages, more frequently in adult life. The parasites may cause no disturbance, and are rarely dangerous. Of course, the knowledge of the presence of a boarder causes great anxiety and worry. The patients frequently complain of considerable distress, abdominal pains, nausea, diarrhea. The appetite is occasionally ravenous. In women and nervous patients the constitutional symptoms are more pronounced and not infrequently we meet with cases of great mental depression and hypochondria.

The diagnosis is easily established on inspection of the stools. Ripe segments fall off the trunk of the worm and pass with the evacuations, where they are visible to the naked eye. Before treatment is begun we must always assure ourselves of the presence of the parasite and not rely only on the symptoms which are common to other diseases.

To remove the parasite we must first order preliminary for a day or two a very light diet, and prepare the bowels by a saline cathartic. Then prescribe a specific drug to kill off the worm. There is a variety of them. Male fern is the one most frequently used. The ethereal extract of it is given plain or in capsules, or in combination with castor oil to insure the passage of a deadened parasite. The drug is ordered on the empty stomach and the dose is taken divided at frequent intervals and in the course of four or five hours the parasite passes with the stools. The cure is only positive when the head is removed. Otherwise the parasite continues to grow and fresh segments appear within a few months. In some instances it is extremely difficult to have the head brought away, and repeated courses of worm remedies have to be given.

Another form, the most common human parasite, is ascaris lumbricoides. This form is cylindrical, pointed on both ends, has a yellowish-brown, sometimes a slightly reddish color. The parasite occupies the upper portion of the small intestine. Usually not more than one or two are present, but occasionally they occur in enormous numbers. Their migrations are big. They pass into the stomach and are brought up in vomiting, or they may crawl up the esophagus and enter the pharynx, from which they may be withdrawn. In rare instances this worm reaches the larynx and produces fatal asphyxia. There are also many cases on record where the worms migrated into the bile ducts.

The symptoms caused by this worm are mostly due to a reflex action, the worm acting as a foreign body, and by its movements and migrations irritating one or the other parts of the splanchnic nervous system. On the other hand, it is proven that the worm produces an irritating substance which acts as a poison, affecting mainly the nervous system, producing at times a picture of meningitis, so-called toxic meningismus. A specific for this worm is santonin, given in doses of one-half to one grain for a child, and two to three grains for an adult, followed by a calomel or a saline purge. The dose is given every three or

four consecutive days. An unpleasant complication sometimes follows the administration of santonin, so-called "yellow vision," a yellow coloring of all objects, which is only temporary.

One more form, the thread worm, or pin worm, oxyuris vermicularis. This is the most common parasite, occupying the rectum and the lower portion of the large bowel. Pin worms produce great irritation and itching, particularly at night, symptoms which become aggravating by the nocturnal migration of the parasites. The oxyuria may go through the intestinal wall, and has been found in the peritoneal cavity in peri-rectal abscesses. Rarely it travels upward and lodges itself in the blind pockets of the intestine. Only a short while ago we had the opportunity to operate on a little girl at this hospital for appendicitis. The removed appendix contained live pin worms. The patients, most frequently children—but we meet them in adults—are greatly annoyed by these little inhabitants of the rectum. They become very restless and irritable, and the sleep is often disturbed. There may be loss of appetite, a secondary anemia. The worm is readily detected in the feces. Small, thin, white, silk-like movable little worms do not escape the eye. Infection probably takes place through the water, possibly through such as lettuce and cresses.

A person carrying the worms passes them in large quantities with the feces, and the possibility of re-infection must be carefully guarded against. Children should be taught not to come in contact with their rectum, otherwise they are liable to swallow the ova carried on their little fingers.

The treatment is simple, though occasionally there are instances in which all forms of medication are futile. Santonin in small doses in combination with purgatives like rhubarb is given internally. Locally large injections containing a weak solution of carbolic acid or vinegar, quassia, aloes or turpentine. In children cold injections of strong salted water is effective. A decoction of garlic in milk is a common remedy. All these injections must be kept up at least ten days, and while giving the hips must be well elevated so that the child retains the fluid as long as possible.

For itching, vaseline or belladonna ointment is applied around the rectum. At the same time it prevents migration of the worms.

Liver.

The diseases of the liver and the bile ducts are next to be considered. While speaking of the acute catarrhal inflammations of the duodenum, I gave you the picture of catarrhal jaundice, which usually follows the inflammation of this portion of the intestinal tube. You remember it starts with pain in the epigastrium, coated tongue, impaired appetite, nausea, at times vomiting, and constipation or diarrhea. In three to five days the eyes become yellow and jaundice gradually appears all over the body. The skin is dry and itchy. Bowels constipated; the stools are whitish or clay colored. Urine heavy and dark, and the foam on it has a greenish hue.

Catarrhal jaundice is caused by excess in eating and drinking. May also be the result of exposure, of sudden changes from heat and cold. It lasts from three to five days, to a week or longer; usually ends in recovery.

Treatment consists of rest in bed with a bland, soft diet; we avoid all starchy, sweet and fat articles because the absence of bile interferes with the intestinal digestion. The treatment is directed toward the catarrhal inflammation of the duodenum and the bile duct, and consists in ordering of salts like sodium phosphate or magnesium sulphate, or a course of calomel. The retention of gall has a toxic effect on the whole body, and patients recovering from an attack of catarrhal jaundice complain of general weakness and recuperate only

slowly. General rules for convalescence are applied here with the aid of roborant tonic drugs.

Catarrhal inflammation of the bile ducts is a minor disease; much more serious conditions arise when we have to deal with concrements of bile, so-called gallstones, which are forming in the bladder or in the smaller bile ducts. The commonest attack of what is called gallstone colic is due to incarceration of such a stone in the small lumen of the bile ducts, leading from the liver and gall-bladder to the duodenum. The passage of such a stone through a very narrow canal is acompanied by attacks of a severe excruciating pain in the epigastrium, radiating toward the right hypochondrium, of a piercing, cutting character, felt directly opposite in the back and extending toward the right shoulder. These attacks of pain are independent of taking food. Usually come on at night, waking the patient from a peaceful sleep. The attacks last from half an hour to many hours, depending upon the size of the stone or the location of the duct where the stone has been arrested in its migration. Not all stones pass through the opening of the duct in the bowel. A good many of them are falling back in the bladder, where they came from. As to the origin of the stone, we have to accept the bacterial theory. The gall-bladder becomes infected by one other species of bacteria, most frequently by the bacillus coli communis or the typhoid bacillus. This infection causes an inflammation of the mucous membrane lining the gall-bladder, which results here, as elsewhere, in congestion, swelling of the mucous membrane, and a production of an excessive amount of mucus. The fluid bile settles around the particles of mucus; the salts kept in solution in the gall fall out of the solution in the same way as if you would drop a thread in a solution of sugar or salt in water, and you would soon notice crystals of salt forming around the thread, and on the same principle the bile salts kept in solution while the conditions are normal are usually falling out through the presence of mucus in the gall-bladder. These small crystals form a nuclei for the future stones. These stones on the other hand act as foreign bodies and keep up the inflammation. So we have a vicious circle. The more inflammation, the more more stones; the more stones, the more inflammation. The attacks of colic are not all due to the migration of these stones. They are just as frequently caused by the inflammation of the gall-bladder alone without stones as by the stones themselves. If the excretion of the mucus is very marked it fills the bladder, and we can palpate right under the liver a good-sized, pear-shaped tumor which consists of the distended gall-bladder. If the contents are only mucus we call this condition the hydrops of the gall-bladder. In other instances the infection is a mixed one.

The cause of inflammation is a combined action of the bacilli coli or typhoid with the pus-producing bacteria, and in such cases the bladder is filled with pus and we have what is called empyema of the gall-bladder.

As to treatment of diseases of the gall-ducts, we must say that in cases of empyema the only treatment is surgical here as well as in cases of collection of pus in other cavities or parts of the body. Pus has to be drained and this can only be done by surgical means. As to hydrops or accumulation of a watery fluid without pus, we can apply here more conservative treatment. Rest in bed, hot fomentations to the hypochondrium, applied continually, not only relieves the pain, but reduces the inflammation and helps the absorption of fluid. Saline laxatives are freely administered to relieve the engorgement of portal circulation. The diet is restricted to one of bland character and by applying such measures we are frequently gratified by the recoveries of our patients.

For severe attacks of pain, the real gall-stone colic, such palliative measures are not sufficient. The pain demands prompt and radical relief, and the best way in which it is obtained is by a hypodermic injection of morphine. Usually a good-sized dose is needed, one-quarter to one-third of a grain, to kill the pain. After the pain has subsided the treatment is directed toward correction of diet and habits, which are in part responsible for formation of gall-stones.

The laws of gravity favor the formation of stones. Therefore, tight lacing or thickening of the bile are predisposing causes. We advise our female patients to give up corsets. We suggest to partake freely of pure water to increase the flow and dilute the bile. We forbid indulging in rich foods, in spices, alcoholic drinks, because all of these have a tendency to irritate the liver and increase the amount of salts in the bile. A course of mineral waters with a rigid restricted diet has been the classical treatment for gall-stones and often crowned with permanent relief.

The liver is, as a rule, the seat of a chronic inflammation with the exception of the rare abscess of the liver, which is secondary to infection lodged somewhere in the intestinal canal when the microbes are carried directly up the portal vein and settle in the iiver cells. All other inflammations are of a chronic character. The liver being the natural filter of the body, so to say, our storage plant, continually responds to all irritations and irritants consumed by us with our food. One of the most common forms of this chronic inflammation is due to drink. The prolonged use of alcoholic stimulants, whiskey, beer or ale, cause an inflammation of the connective tissue of the liver. Later on, the connective tissue of the liver begins to shrink, the liver gets harder, the cells, from pressure and deprived from nutrition due to the compression of the capillaries, are gradually wasting away, and the excretory function of the liver is reduced to a minimum. So in this case we have first an enlargement of the organ, so-called hypertrophic cirrhosis, which is followed by a shrinkage of the organ, atrophic cirrhosis of the liver. The shrinkage of the connective tissue interferes with the circulation of the blood in the vena porta and its branches, which, as you know, must pass through the liver before they enter the large vein. The collateral circulation is not always able to carry off the whole blood, and the result is an accumulation of serous fluid in the peritoneal cavity which is called ascites.

The atrophied cirrhosis is most exclusively met in alcoholics, while the hypertrophic forms can be caused by malaria, syphilis, and are met in cases of chronic diseases of the heart and lungs, like emphysema. In these last instances the hypertrophic cirrhosis is due to stagnation of venous blood in this largest gland in the body.

One more disease of the liver I want to mention is cancer of the liver. It is primary or develops secondary to a cancer of the stomach or other organs in the peritoneal cavity, the so-called metastases of cancer. It forms tumors of different size, which start from the interlobular connective tissue, and as the tumors grow on the hepatic cells atrophy is the result of the pressure of the new growth. The branches of the portal vein are also compressed and atrophied, thereby blocking the portal circulation, and if the patient outlives this stage we have to deal with an ascites, as in cases of cirrhosis of the liver, the result being the same, no matter what is the direct cause of the pressure and compression of the liver capillaries.

The symptoms of cancer of the liver are very vague. Lack of appetite, disturbance of digestion, flatulency, constipation, pain in the region of the liver, jaundice, emaciation, anemia, etc. The picture of cachexia; the picture of cachexia due to toxins of the cancer.

The duration of cancer of the liver is about one year or one year and a quarter. Prognosis, death. Treatment, symptomatic.

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SUBSTITUTES FOR MOTHER'S MILK.

L. S. London, in the *New York Medical Journal,* points out that methods which give good results in some cases fail with others; one infant will thrive on a quantity of food that is insufficient for another of the same age, another may gain weight rapidly, but still be undeveloped. Ignorance, poverty, improper administration are predominating factors in unsatisfactory substitute feeding; learning food formulas will not make a successful feeder. The requirements are a clear understanding of the essential principles involved in artificial infant feeding, and proper knowledge how to prepare food under different conditions.

It is an acknowledged fact by all pediatrists that fresh milk of some kind is the best substitute for human milk, and that there is no animal that secretes milk having the same proportions as human milk. The most available milks are cow's and goat's, and efforts have been made to make them simulate mother's milk. Cow's milk is richer in proteid and forms curds in the stomach, hence the process of simple dilution arose and cereals have often been added to aid the digestibility by softening the curds; peptonized milk is found not to form curds, or if partially peptonized, curds are small in formation, and at one time peptonized milk was looked upon as the solution of the problem.

When the action of bacteria on milk was recognized, sterilization was introduced, and it was soon noticed that sterilization affected the milk unfavorably, and Pasteurization was introduced. These processes did a great deal of good under certain conditions, but the real problem has not been completely solved.

It was noted that human milk was slightly alkaline, and cow's milk both alkaline and acid, and the addition of lime-water and sodium bicarbonate was looked upon as a fundamental process. In this instance two important errors were made:

1. The milk does not meet enough acid in a young stomach to precipitate it, but the rennin which is present solidifies it. It was found that the addition of five per cent of lime-water to whole milk gave it the same reaction, or the addition of one or two grains of sodium bicarbonate to each ounce of infant's food produced the same result. When this came to actual practice, lime-water, anywhere from 40 to 100%, had to be added.

2. It is known from authority that there is one part of albumin to five parts of casein in cow's milk, and two parts of albumin to one part of casein in human milk. Investigators, who have made an exhaustive study of this subject in the milk of hundreds of cows supplying milk for cheese making, find that there is no fixed relation between casein and albumin.

These different methods of making supposedly human milk from cow's milk have all fallen under the heading of "modifying milk." As a matter of fact, none of the methods have resulted in making human milk, and some of them are wide of the mark.

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CONCOMITANT ANEMIA.

Robin, in his excellent article upon chronic gout, prescribes the following pill for the concomitant anemia:

Ferric potassium tartrate, Quinine hydrochloride...	aa, 0.05 gram.
Extract nux vomica	0.02 gram.
Extract quinine	0.10 gram.

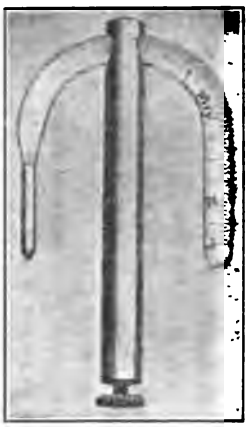
M. ft. cap. No. 1.

Sig. One capsule after each meal.

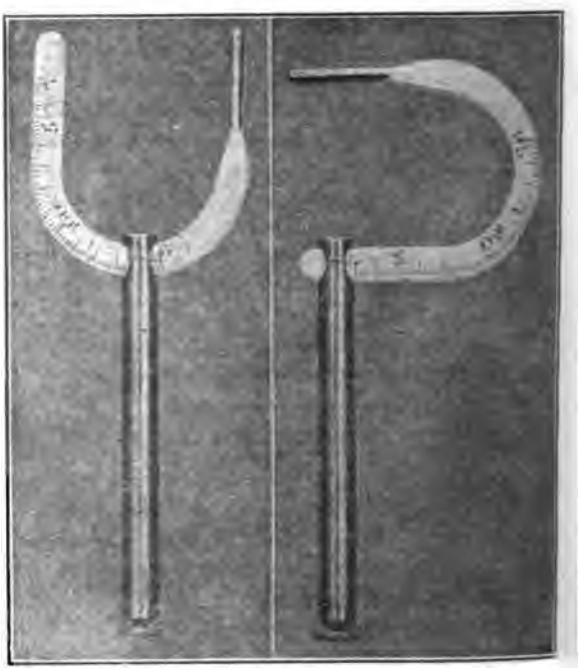
A NEW CLINICAL THERMOMETER.

T. Wilson Parry sends the following communication to *The Lancet*:

Hardly a day passes without medical men and nurses alike being reminded of some of the exasperating defects of the ordinary straight clinical thermometer. Perhaps the most glaring of these is its positive refusal, in certain individuals, to lie under the tongue when carefully placed there. Even if the bulb be retained between the under surface of the tongue and the floor of the mouth for the allotted minute or half minute, as the case may be, the temperature recorded is not accurate. During the process of graduating a thermometer the whole instrument is immersed in water of known temperatures while the marks indicating the different degrees are being registered. It therefore follows, logically, that the whole thermometer ought to lie on the floor of the mouth, under the tongue, in order to ascertain the temperature in that part. The thermometer I now wish to place before the profession is an ordinary small one, which has been carefully curved to lie on the floor of the mouth, under the tongue, without the possibility of rising above it. For convenience sake there is a small shaft, to serve as a handle, with a hole at one end through which the glass tube passes, and a screw at the other which can be adjusted to fix the thermometer at any required angle. To shake the mercury down the handle is moved to the distal end, the screw readjusted to hold it in this new position, and a few vigorous jerks will bring about the desired result. The practical advantages of this new thermometer are, therefore, the following: (1) That on account of its shape it can be easily placed and retained sublingually in the best possible position for obtaining an accurate temperature; (2) that on account of its total submersion under the tongue it gives a more scientifically accurate registration than the ordinary straight thermometer; (3) that the power obtained by fixing the handle at the distal end of the tube enables the mercury to be the more readily shaken down; and (4) the risks of breakage of the thermometer by the patient's teeth are entirely obviated.



Dr. T. Wilson Parry, the inventor of this novel thermometer, has himself seen to its careful manufacture to his entire satisfaction. From him, therefore, all information respecting it can be obtained.



THE DOCTOR HIMSELF.

WHAT CONSTITUTES LONG LIFE?

ACCORDING to the Psalmist, says the *Star of Hope*, "the days of our years are three score and ten; and if by reason of strength they be four score, yet is their strength labor and sorrow."

Statisticians tell us that the average length of human life in the United States was, in 1909, thirty-five and two-tenths years; that it is gradually and continually increasing, and in some localities is now more than forty-three years.

The tables by which nearly all life insurance companies in this country measure the expectancy of life and by which annuity companies determine the cost or value of an annuity, fix the extreme normal limit of man's life at eighty-three years.

Those who survive us may, of course, reckon the length of our physical life by counting our years. But the period that elapses between the day of one's birth and the day of one's death is not the best nor the true measure of one's life.

Some number, or try to believe they number, their days by the good they do.

Some count their days of pleasure as the days they have lived. "Eat, drink and be merry," is their motto, and for those who are guided by it, its conclusion, of which they very seldom really think—"for tomorrow we die"—is a veritable truth. As some one has well said, "Whom pleasure follows, pleasure slays," and usually long before he has enjoyed anything other than its husks.

Some think they should live solely for a life beyond the grave, making this life but a preparation for the future. While we may admire their devotion to a principle, we can not but question the wisdom of the man who, in his anxiety to reach a goal, fails to see the sunlight that shines in the pathway he is traveling, to inhale the perfume of the sweet flowers that everywhere abound, and hear the delightful music of the singing birds that circle above his head. Blindly he shortens his life, though he lives until well on toward the century mark.

Then there are others who are hungry for power or fame or wealth, or it may even be that noble acquirement, learning. Days are spent in the pursuit of that which gained means appetite—insatiable appetite—for more. The days of their life, they think, are the days when they get something, when they take a step toward that which they believe will, but which never does, satisfy their longings.

But none of these have learned the secret of living a long life. All these things—pleasure, good works, religion, the acquisition of that which the heart holds dear, whether it be wealth, fame, power or learning, or some of each, may have a place in the life lived to the full, but they do not, any of them make such a life. Life—long life—is and means something more, but what? Who can answer?

MEDICAL TESTIMONY.

The Lancet comments editorially upon the observations which, according to the daily press, were recently made by the judge of the county court in the course of a case under the Workmen's Compensation Act. The judge is reported to have said that one doctor had declared the plaintiff's condition to be owing to an old injury of last year, while the doctor on the other side said the opposite, with the result that he (the judge) must refer the question to somebody else—that is to say, to one of the medical referees appointed by the Home Secretary. Not content with this obviously proper statement, the judge is reported to have added: "We have to put much confi-

dence in doctors; but the fact that they come into a court to give evidence on either side is not creditable to the members of the profession. They can not be giving their evidence honestly. They will come and say anything because they think we are fools." Whatever medical men may think, it can not warrant the judge in suggesting that these medical witnesses were not giving their evidence honestly; and such an imputation, cast upon them from the bench without, as far as appears from the report, any shadow of reason, is shocking to all preconceived ideas of judicial impartiality and dignity. The very fact that referees are appointed by the Home Secretary shows that the framers of the Act were fully aware that differences of opinion must arise in relation to the cases dealt with under its provisions; and that such differences, inevitable as every medical practitioner would know them to be, do not afford even the appearance of an excuse for accusations of dishonesty against perfectly upright and honorable men.

Politicians too often do not think it necessary, prior to legislation, to obtain any adequate or accurate information concerning the circumstances to which the new legislation is supposed or intended to apply; they are too ready to enact what appears to be least likely to give popular offense, and to fling it down to be licked into shape by courts of law and by experts, at the cost, sometimes even at the ruinous cost, of the classes or individuals whom it is supposed to benefit or to protect. It was manifest to every surgeon or physician that questions relating to the real or supposed connection between some accident or injury and the subsequent health of the person sustaining it would be certain to crop up under the Compensation Act, and that these questions, which would frequently be insoluble by any direct evidence, would be among the most difficult and most perplexing which could be presented to a practitioner. It was equally manifest that every large employer of labor would be likely to protect himself by the advice of a medical man, whose duty it would be to guard him against being swindled either by malingerers or by persons with whom the connection between some real malady and some recent accident was at best only an after-thought. The attention of such medical men would quite excusably be directed rather towards the detection of fraud than towards the recognition of genuineness. On the other hand, the medical attendant of the patient concerned, assuming that his own suspicions of fraud had never been aroused, would be quite likely to defend the opinion of the case upon which he had acted from the beginning, and almost to resent the suggestion that he had himself been more or less the subject of deception. With most patients, however, there is some tendency towards an exaggeration of symptoms or of disabilities calculated to support the view which they are themselves anxious to maintain; and we need not look beyond these facts in order to find a sufficient explanation of differences of opinion concerning questions which do not admit of demonstration. The real difficulties arise from the frequent incapacity of the tribunal to which such cases are submitted for ultimate decision, and from the inability of judges, counsel, and jurors to understand the presence of unknown quantities which may render the problems containing them insoluble. It is, in most cases, absolutely impossible for a medical witness to make a non-medical audience understand the precise nature of the doubt which restrains him from a positive expression of opinion; and any endeavors which he may make in this direction are, almost as a rule, baffled by the desire of counsel to present only a confused issue to the jury.

In these circumstances it is manifestly impossible for medical witnesses to be too cautious, either for their own credit

or for the credit of the profession to which they belong; nor can they abstain too carefully from expressing anything like certainty in conditions in which certainty is not attainable. In the cases arising under the Workmen's Compensation Act the stakes are usually moderate, and the issues are threshed out before tribunals which come but little under the notice of the public, but the hasty words of the judge of the county court are only too likely to be ignorantly reëchoed by some who should know better.

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A HUNTERIAN LIBRARY.

A letter from John Hunter, dated 1786, is extant, says *The Lancet,* in which the great anatomist expresses a hope that the Corporation of Surgeons will form a library, and at the same time he presents his published works thereto by way of a beginning. To these he refers modestly as "the few observations on anatomy and surgery which I have published." These particular volumes are not traceable, but in view of this letter it is interesting to note that Hunter had already helped to found a small medical library, characteristic of the state of knowledge of the times, for the use of the Lyceum Medicum Londinense. This society was founded in 1785 by Dr. George Fordyce, famous and eccentric in his day, and by John Hunter, who were its patrons. Its meetings were held in a room under the Hunterian Museum in Castle Street, and here the books were housed. In the "Regulations and Laws" of the society, published in 1787, we find a list of some 150 volumes in folio, quarto, and octavo, which are designed for the use of members. The books can be taken out by members, who must deposit an equivalent sum of money for the borrowed volumes. "Folios and quartos shall only be kept a fortnight; all other books only a week." Among the folios we find such well-known works as those of Albinus, Avicenna, Dioscorides, Eustachius, Galen, Hippocrates, and Morgagni "De Sedibus Morborum," besides Hoffmann's, Freind's and Parey's works, Dr. Hunter's "Gravid Uterus," and Motherby's "Medical Dictionary." Among the quartos are the works of Haller, Harvey, Heister, and Francis Bacon, as also Dr. Hunter's "Medical Commentaries" and John Hunter on the "Teeth." Monro Senior's works and van Swieten's "Commentaries" are in the same list. Among the octavos are works by Bell (on surgery and ulcers), Boerhaave, Buffon, Celsus, Cullen, Duncan, Huxham, Locke, Lavoisier, Mead, Priestly, Pringle, Spallanzani, Sydenham, Wiseman, and Zimmerman. A few presents to the library are recorded, among which we note works by Fordyce, Hunter, Houlston, Home, Ferris, Cruikshank, Bardesley, Jackson, and Denman, and a six-volume cyclopedia in folio from the "patrons." To which of the great medical libraries these works ultimately found their way it has at present been impossible to discover. They are doubtless the nidus of one or other of our great collections either at the Royal College of Surgeons or at the Royal Society of Medicine.

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CHEAP DOCTORING.

Cheap doctoring, says the *Pharmaceutical Journal* (British), like everything else that is cheap, is apt to be nasty—sometimes very nasty. Those who doubt this should read the signed letter of a medical man which appeared in the *Times* recently. Therein it is related that a doctor with a large contract practice had a surgery in which were five casks, each with a tap and an open top for ready filling. One contained solution of Epsom salts, another infusion of quassia, a third decoction of logwood, a fourth soapy water, and a fifth general rinsings. Other medicines (!) had he none. All of his patients were dosed from one of these five! Asked by a brother practitioner how his conscience would allow him to trifle with the lives of men, he said:

"Well, you see, it is a simple case of 'diamond cut diamond;' the clubs think they are doing me, and I do them instead —that's fair." Another had nothing in his surgery but rows of showy empty bottles on the shelves and three or four cheap and almost worthless drugs in brown paper bags for all his club patients. The correspondent also relates the following incident: A club doctor was dispensing in his surgery when the following dialogue took place with his temporary assistant: Assistant: "What shall I give this man?" Doctor: "Oh! some little thing—it doesn't matter." Assistant: "But what's the matter with the man?" Doctor: "I don't know; I'd no time to make a diagnosis." Whereupon he shook out a few grains of carbonate of soda into the palm of his hand and gave it to the assistant. It was put into the bottle which the messenger had brought, the bottle filled with water, labeled, not corked—and that was all. Doctors in a hurry might with advantage adopt to their private practices a method which is said to have been practiced in our hospitals a good many years ago. In his interesting "History of the London Hospital," Mr. E. W. Morris tells us that there was a time when a receiving-room officer would enter the room and call out, "Now, all with coughs stand up;" "Now, all with stomachache stand up." Mr. Morris also gives an instance of a patient who diagnosed her own case: An old woman who obviously had never been in a hospital before enters the waiting room; after glancing nervously around the crowded room, the dear old soul appeals anxiously to the sister-in-charge to know, "Where do yer sit for tumors?" A little thought, if one had time to think, might suggest other time-saving devices. The object of the *Times* correspondent in turning the limelight on doctors' surgeries is to show what may happen under the insurance scheme. It is not for us to quarrel with his methods, for he has published some excellent reasons why doctors should not dispense, not the least weighty of which is that if they ceased to dispense they would have time to make a diagnosis. It is possible that examples of the kind mentioned could be added to considerably. It is related in one of the London evening newspapers that a doctor heard the following conversation between two navvies on the top of a West Ham tramcar: First Navvy: "You remember when I had that bad eye, Bill? Well, I went to Dr.——, of —— Road, and told him there was a bit of steel in it. He looked at it and went away and in a minute or two came back with a bottle of medicine. He says: 'Take that every four hours.' I said: 'Will that take the steel out of my eye, Doctor?' He says, 'That's all right; one and six.' My eye got that bad the next morning I went to the hospital and they took the steel out all right. When I told them about the doctor they said he must have been mad or drunk." Second Navvy: "Ha! that reminds me of the time when I cut my hand. I went to a doctor in —— Road. He seemed very busy, but he took a glance at it and then gave me a bottle of stuff. I said. 'What's this for, Doctor?' To drink?' He says, 'You can either drink it or put it on your hand, it doesn't matter which.'"

COMPENSATION IN HEART DISEASE.

Dr. James Mackenzie, an authority on diseases of the heart, has some words of comfort for the man with heart trouble.

He says that heart trouble due to damaged valves may persist for fifty years and not interfere with good health and long life. Again, he makes an assertion that should ease the minds of millions of apprehensive persons who fear that they are in danger of death because their hearts sometimes beat irregularly. The British physician thinks that a skip and a jump once in a while is good evidence of a healthy heart.

Mackenzie emphasizes the fact that irregularities of the heart are not neces-

sarily a sign of impairment. Any cause that irritates or excites the heart muscle, as fever, excitement, or effort, at once abolishes the irregularity. So marked are these causes in abolishing the irregularity that Mackenzie has for some years looked upon the presence of the irregularity as a possible evidence of the integrity of the heart muscle, and so far from considering it an evidence of disease or of infirmity, it may, within certain limits, be considered a positive evidence of a healthy heart.

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SURGICAL CONSTIPATION.

Samuel G. Gant, in a paper read before the Medical Society of the State of New York, said that atonic constipation and the forms of acute and chronic intestinal obstruction which killed or greatly endangered life were frequently discussed in medical societies and in current literature, but that obstipation of a lesser degree, which impeded the fecal current and delayed evacuations without causing other manifestations than those due to fecal retention, rarely attracted attention. The writer maintained that 50% of his patients treated for constipation suffered from the surgical variety and believed that in 25% of all cases of costiveness the trouble was due to mechanical defects.

Dr. Gant reported cases previously unsuccessfully treated for habitual constipation which were caused by operative measures. He called attention to the many points of difficult passage to the feces which lay between the cecum and the sphincter muscle and showed how a slight distortion of the bowel might result in delayed or irregular evacuations. He enumerated thirty-five pathological conditions, any one of which was sufficient to induce surgical constipation, and said that in his cases there had been a single less often than multiple causes to account for the obstipation. Often the patient suffered from both atonic and surgical constipation, and in these cases both operation and after-treatment were needed. In making a diagnosis he had found it advisable to ascertain the duration of the costiveness and whether the patient had suffered previously from typhoid fever, peritonitis, ulcerative colitis, or other affections which might have led to the formation of adhesions, stricture, angulation, or twisting of the gut.

Obstipation could be classified as rectal or abdominal, and was very much easier located in the former than in the latter. Abdominal constipation could be diagnosed by percussion and palpation with or without the aid of inflation; in obscure cases the X-ray or exploratory incision was necessary to locate the lesion. Dr. Gant held that there was no excuse for a mistaken diagnosis when the obstruction was located in the lower sigmoid or rectum. When the block was located in the abdomen it required two or three quarts of water to secure an evacuation, but a pint or less would accomplish the same result when the impediment was in the rectum. The chief discomfort of abdominal constipation was incident to the retention of gas, while that of rectal obstipation was due to sensations of weight and fullness.

Of 500 patients treated surgically by the writer for constipation the majority were permanently cured, many others were improved, while 10% received no benefit. With the exception of cancer and stricture the majority of rectal impedimenta responsible for constipation were simple in character and correctible under local anesthesia and the lesions which most often caused abdominal obstipation could be eliminated with but little danger under general narcosis. Dr. Gant then described operations indicated in the treatment of many of the conditions known to cause surgical constipation. In closing he emphasized the prevalence of surgical constipation, its comparatively easy diagnosis, and the good results which followed surgical treatment.

REFRACTION.

LIMITS OF VISUAL ACUITY.

IN the *Electrical World* J. P. Wintringham has the following to say in regard to visual acuity:

"The limit of vision, if of a single object, is not given by its size, as we all know, for if bright enough it will be seen as the stars are seen, no matter how small. That is the principle involved in ultra-microscopy. But if we take a series of equidistant ruled lines then the limit is between 100 and 400 lines to the inch at a distance of 10 inches, the standard distance for reference. Now we come to the part that will, I suppose, be the most interesting and surprising to those who have not looked far enough into the matter to learn that the factors that govern are not the acuteness of the eye, but the same ones that govern in the great majority of optical instruments, notably the camera, the telescope and the microscope. To put it in another way, the eye is so perfect that the limit of vision is fully reached by its powers or fineness of structure. The limit is given by optical considerations or the laws of light.

"It was the common idea that with sufficient magnification anything could be seen, but we now know that it is not so. We now think of the light as being (electromagnetic) waves, and know that, as waves may be added together to give increased effect or to obliterate each other, the limit is given by those arrangements that cause the obliteration of fine details. This is the aperture or diaphragm of the camera, the telescope, the microscope and the eye. It is also a function of the wave-length, which, of course, we have to call color. Mr. Ives has exhibited the increased resolving power of the microscope given by light of the blue end of the spectrum over the red or yellow. It may be of interest to state these limits in a few cases. In the telescope the limit of useful magnification is about nine times the aperture in inches, and in the microscope the number of lines to the inch that may be seen is about 80,000 times the aperture expressed in a function of the circle, which will figure out a little over 100,000 lines to the inch.

"As the average wave-length is about one fifty-thousandth of an inch, we can see two lines in the length of a wave of light. As the blue light has a wave-length of a little more than one-half the red, it enables us to see more lines to the inch, but not quite twice as many. For the telescope the formula is given by Lord Rayleigh in the article on 'Wave Theory' in the Encyclopedia Britannica (tenth edition). Helmholtz probably first showed the application of the principle to the microscope, but Abbe, who was the head of the best known firm of German opticians, has the credit of working the matter out very elaborately. A piece of microscopic apparatus that bears his name does not pretend to be achromatic.

"Helmholtz did speak of the eye as not being perfect, but our celebrated American scholar, Robert W. Wood, thinks Helmholtz was too critical, and refers to the wonderful fact that it is an optical instrument with a perfectly automatic diaphragm or iris. I would call attention to another automatic adustment that tends very largely to correct any slight imperfection it may have, namely, that the eye always centers itself on whatever is looked at, and the errors are negligible at the center.

"The camera lens has seven different distinct aberrations, or errors, which have to be corrected to make it perfect, without counting those due to color, and

there are half as many again under that head. The seven can not be all corrected perfectly at once, and a compromise is made in some way to meet given conditions. The eye is known not to be perfectly achromatic, but it is so nearly so that its defects are seldom or never noticed in ordinary life. I have noticed that a bright-colored window, such as is common in the churches, sometimes gives an effect whereby the parts of different colors appear to be in different planes.

"Somehow I can not get rid of the thought that it is rather odd to criticize the eye, to which we must look as the judge in these matters. Still, if any one can in any way improve our powers of vision no one would welcome it more than I."

CONVERGENCE AND ACCOMMODATION AN HABITUAL RELATION.

Geo. J. Burch, in *The Ophthalmoscope,* points out that in the ordinary use of the eyes we converge the axes first—usually in the act of directing the eyes to the object—and focus when we have fixed it.

The author has employed the following experiment to show how much longer it takes to accommodate than to converge the eyes to a given distance. Let there be two objects, one far off and one much nearer, in front of it. Distant scenery and a name written on the window pane will do excellently, because neither interferes with the view of the other. Then, sitting a comfortable distance from the nearer object, ascertain with a stop-watch how long it takes to look from one to the other and back again twenty times.

Using one eye, when they have nothing to do but focus, most people take from 45 to 50 seconds. Using both, the average time required is about 30 or 45 seconds. That it should take less time to perform a two-fold action seems anomalous; but it would appear that under the circumstances accommodation is not effected with any degree of accuracy, for if the near object is a spider's web, and the distant one a few fine wires stretched over white paper so as to be invisible unless they are focused, the experiment takes longer and proves very fatiguing whether performed with one eye or with two.

Used in moderation, with each eye separately and then with both, it is a very valuable kind of ocular gymnastics, that not only relieves the cramped feeling of the eyes after long reading, but may even restore the power of accommodation when it has been prematurely lost by disuse.

All this goes to prove that the connection between convergence and accommodation is habitual rather than automatic.

When the definition of one eye is quickly lost, so that there ceases to be sufficient detail to constitute binocular vision, for days and even weeks the damaged eye gropes about, as a man gropes in the dark with his hands, feeling for the other image, while all the time the sound eye is looking quietly at it. If, by dilating the pupil with atropin, sufficient rays can be got past the opacity to form a definite image, the muscles of the eyeball instantly come into play and there is a sense of relief. I write positively, because in this matter I write from personal experience. But I can go farther. When, after binocular vision has been in abeyance for five or six years, it was suddenly in a great measure restored, the habit of convergence had been lost, and for a day or two it required an effort of the will, so that I had once more the sensation of groping, with the difference that now it was successful. This effect passed off, but while it lasted I realized, as never before, what an important factor of visual sensation binocular vision is. We feel the distances of things as truly with our eyes as we can feel the shapes of them with our fingers. It is a faculty that we have to acquire, and can forget. And we do it in two

ways—mainly by the convergence of the optic axes, but partly also by the act of focusing. No amount of theoretical discussion could alter my conviction as to these facts of experience.

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REFRACTION BY THE GENERAL PRACTITIONER.

Ellice M. Alger, in the *Monthly Cyclopedia and Medical Bulletin,* says that perhaps no one except the wholesale manufacturer of optical goods realizes the vast proportions to which the wearing of glasses has grown in the last quarter of a century. The time is not so far past when only elderly people used them, and then in a shamefaced way. Nowadays the young wear glasses nearly as often as the old. Probably ten million people in America today are wearing glasses, and the number is rapidly increasing; of this vast number probably not 1 in 25 has ever been examined by a physician.

The public must have eventually a service which it can afford and which it can trust, and one of two things must happen: Either the general practitioner must take it up or we must devise means for educating the younger generation of refracting opticians through semi-medical training like that of the modern dentist. It is highly desirable that the family physician should take up this work both for his own sake and that of his patients. It is becoming more and more evident that the body is not made up of independent organs which can be dissociated and treated by themselves. The eye, among the rest, and even more than most, affects, and is affected by, actual disease in distant organs, while its functional derangements, sometimes proceeds from other organs and are again the cause of malfunction elsewhere. Furthermore, the general practitioner can not afford to abandon to the optician a field which means at first only the furnishing of glasses to those whose vision is defective, but finally will involve the primary treatment of many cases of headache, dizziness, nausea, and the like.

The general practitioner, in taking up this line of work, will rapidly develop an "eye sense." He will begin to notice abnormalities out of the ordinary routine—squints, cataract still in the incipient stage, fundus changes due to general disease, and a host of things at present neglected entirely which, for the best interests of the patient and himself, demand expert help. The general practitioner who has been taught to see such things is one of the best assets to the specialist; but the ordinary conjunctivitis, the ordinary iritis, the general practitioner should be able to recognize and treat as successfully as the specialist. The discriminating general practitioner will develop better specialists, for many a so-called specialist has no qualifications beyond his office outfit and is incapable of doing really expert work in diagnosis or treatment, and especially in refraction.

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UNCERTAIN RESULTS OF MUSCLE CUTTING.

Annals of Ophthalmology asserts that there is no rule, there never can be, for determining that a certain degree of muscular insufficiency or overactivity requires a definite amount of cutting or advancement of a muscle. Indisputable proof of this assertion is found in the fact that men who use the most accurate instruments and make the closest measurements, men whose operative technique and skill is beyond question, often operate six, eight, ten and sometimes twenty times on one patient, which shows most conclusively that degrees in prisms and millimeters in muscles are not interchangeable values.

The writer has seen many of these over-operated patients and has frequently listened to their expressions of profoundest regret that they ever submitted to the treatment. Their last state is often worse than their first. Not that

he would decry operative treatment, for he has seen many brilliant successes as well as lamentable failures, but he does say that operations on the ocular muscles should be most carefully and conscientiously considered, and held in reserve as a last resort.

Then, having determined the kind and approximately the amount of the error, we can go ahead, using our best judgment acquired by long experience. Results are necessarily uncertain. One more caution: Never, if you value your future peace of mind, put the points of your scissors beneath the conjunctiva of a neurotic patient.

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TESTS FOR A PLANE SURFACE.

There are many optical tests to detect whether a surface is plane or not, but two of the simplest and best are as follows: Having secured a known plane surface, press the one to be tested lightly against it and hold the two a little oblique to the light from a good diffused source. If the surface tested is a true plane nothing will be seen, but should it be slightly convex or concave, Newton's rings, due to interference, will appear, their shape and size giving a very fair idea as to the power and regularity of the surface. Success in this experiment depends chiefly upon the cleanliness of the surfaces, as the slightest speck of dust is sufficient to prevent perfect contact.

The second method is that of oblique reflection. A regular source of bright light, such as a small square aperture, is used and its image reflected very obliquely in the surface. It is generally sufficient to observe this directly with the naked eye, but the test is rendered more delicate if a small telescope, previously focused for parallel light, is employed. If the surface be convex then the image of the square will appear as a rectangle, with its greater diameter horizontal; if concave, the square will still be rectangular, but with the long diameter vertical. Any irregularity will be rendered apparent by distortion of the square and a cylindrical or toric surface will as it is rotated produce a corner-wise lengthening resembling a lozenge.

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ACTION OF CAFFEIN.

J. D. Pilcher, in *The Cleveland Medical Journal,* reports a series of pharmacologic observations upon the action of caffein on the mammalian circulation. Eliminating incidental actions, he determined that therapeutic doses increase cardiac tone, the heart contracting to a greater degree in systole and relaxing less in diastole. The vasometer center is stimulated, but with vascular relaxation. Sometimes blood pressure is raised, but usually there is a more rapid flow.

Larger doses result in a decrease of cardiac tone, a marked vascular relaxation and a lowering of blood pressure. Excessive doses cause death by cardiac dilatation.

Clinically, and in small doses, caffein may be efficacious, when the heart is dilated. Caffein acts on the peripheral vessels by preventing constrictor tone and not, as do chloral and the nitrites, by dilating the vessels directly. The vessels of the spleen and the intestine react quite as readily as do those of the kidney. Too large doses cause an irregular pulse, and care should be exercised in this direction. The rate and depth of respiration are increased.

The experiments did not show that the diuretic effect was due to any direct influence upon the kidney cells. In general, caffein may be said to have a more prompt but less lasting influence than has digitalis.

The combined or conjoined action of caffein and alcohol heightened the toxicity of caffein. In severe alcoholic intoxication little is to be expected from caffein; in mild alcoholic intoxication it may be of some value.

MEDICAL PHARMACY.

PHARMACOLOGY AND THERAPEUTICS OF LECITHIN AND PHYTIN.

WILLIAM BAIN, in *The Lancet*, looks upon lecithin as a valuable drug in anemia and debility. It may be regarded as a metabolic stimulus, for it can hardly be supposed that the small amount of extra nitrogen and phosphorus administered in doses of a few grains daily can act as a tissue-former in any substantial degree. Its beneficial effect upon the nervous system should be regarded as secondary to improvement in general nutritive condition, and not because lecithin is a "brain food." Experiments made by the author show that lecithin, administered either by the mouth or under the skin, causes a marked increase in number of red and white corpuscles, and in the percentage of hemoglobin. With regard to phytin (inosite phosphoric acid ester), the evidence of its value in animal nutrition is rather conflicting. If it is utilized by animals, the question arises as to how it is digested. The enzymes at present known to exist in the alimentary tract have been shown to have no action on phytin. The enzyme phytase, which is responsible for the cleavage of phytin, though present in plants, appears, from the recent work of Plimmer, to be absent in animals; he suggests that it is, therefore, probable that if cleavage occurs in animals it is due to phytase contained in the food taken. The author's experiments with phytin on rabbits were not sufficiently encouraging to warrant his testing its usefulness clinically.

MOLECULAR PHYSICS.

Sir J. J. Thomson, professor of natural philosophy at the Royal Institution, in commencing a series of six lectures on molecular physics, said that although the title was rather vague, he proposed mainly to deal with the construction and properties of molecules, which are in themselves far beyond the range of microscopic visibility. Yet the number of molecules in a given space is known with considerable accuracy; at ordinary temperature and pressure there are about 2.7×10^{19} or 27 trillion molecules of air in each cubic centimeter. To illustrate the minuteness of the molecule, he said that if during 100 million years some physicist had collected molecules at the rate of one per second, the amount gathered in that vast period of time would occupy a volume equal to that of a tenth of a pin's head, and they could not be detected by chemical methods. By other means a single atom can be detected, as in the case of alpha particles, which are single atoms of helium, carrying a positive charge. These are emitted from radium at a velocity of over one million miles per minute, and cause emission of light on striking a Willemite or zinc-sulphide screen. In this way Dr. Geiger has actually counted the number of particles shot out from radium in a given time. Another delicate method of detection has been developed by Mr. C. T. R. Wilson, of the Cavendish Laboratory, depending on the ionizing power of alpha and beta particles in a gas. This method consists in causing sudden expansion of a volume of moist dust-free air, thus producing a super-saturation of water, which remains invisible unless dust or other particles are present; but if rays such as alpha, beta, or gamma are present, they split up the air molecules and produce ionization. These shattered molecules are equally capable of condensing the water-vapor, and thus forming a visible cloud. This experiment was shown and Mr. Wilson had so

perfected this method that it is now possible to see and photograph the actual path of each alpha particle. The average speed of air molecules (under the kinetic theory of gases) at ordinary temperatures and pressures is about twelve miles per minute, far too small to produce visible effects on a sensitive screen; if, however, an atom or molecule is charged with electricity it can be speeded up enormously (ten thousand times or more) by the action of an electric field. The lecturer showed an apparatus for doing this and the method of producing photographic records.

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CACTUS IN THE NEUROSES.

The *Eclectic Medical Journal* declares that cactus is a leader in functional nervous disorders with depression. It acts much like pulsatilla, and is indicated by closely similar indications. If nervousness be associated with cardiac symptoms, cactus is all the more efficient. It increases the blood supply, and hence the nutrition of that organ and the nerve tissues. In our opinion the greatest value of cactus as a remedial agent lies in its power to control the nervous element of cardiac as well as other forms of disease. Cactus improves innervation, and is thus the logical remedy for enervation. Gloomy thoughts, despondency, melancholia, tendency to view life darkly, apprehension of impending danger or death, fear of insanity, irascibility, vague fears, and extreme sensitiveness frequently fade away under the use of cactus. A very common and direct indication is that already referred to: a sense of a bandlike or viselike constriction in any part of the body. Cactus is one of the very best agents with which to combat the nervous exhaustion consequent upon excesses of tobacco, tea, coffee, liquor and venery, and brain-tire, brain-fag, weakness from overwork, and the nervous exhaustion from hemorrhage. Few agents are more satisfying in meeting the needs of the woman at the menopause, in those distressing phenomena that make life a burden: nervous oppression, in headache at the vertex, heart palpitation, dyspnea upon the least exertion, hot flashes, cerebral fullness, and outbursts of emotion and temper. During the active menstrual life of woman it relieves many of the neurotic symptoms when due to enervation and association with irregular action of the heart, or due to menorrhagia. For the menstrual headache with pressure at the top of the head it is most serviceable. For the nervous weakness of the aged, cactus is unexcelled, and the only case of Raynaud's disease in which we obtained satisfactory results, cactus alone was used, with the result of keeping the circulation of the fingers free from vasomotor spasms. No neurasthenic should be given up without a thorough trial of cactus. It has recently been praised in epilepsy. The dose of specific cactus is from the fraction of a drop to ten drops.

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DETERIORATED DRUGS.

Chas. E. Warren, in *The Medical Fortnightly,* says:

Castor oil can't be beaten as a popular laxative or purgative as the case may be; witness its presence in the majority of households the sole pretense to a household medicine chest. But it's poor economy or foresight to buy castor oil in bulk as some do to get the benefit of a wholesale price. For rancid castor oil is a thing to be abhorred and one that is injurious rather than beneficial.

Freshness in all medicine is a *sine qua non* to obtaining its actual efficacy and avoiding undesirable or injurious effects from products of alteration or decomposition. Sweet spirit of nitre, another common household remedy, illustrates this well; for with age it becomes discolored and acidulous, irritating the stomach. Yet our good friends, the farmers, buy it by the quart for man and beast, and use it to the last drop, no matter how old. * * *

While we realize these things do we realize that we sometimes transgress reasonable consideration of conditions? There are few physicians who do not dispense medicine themselves, it may be only for the present and urgent conditions, it may be for the whole course of treatment. Prompted by economical considerations, which seem sound, we are apt to buy and benefit by the thousand price. Bye and bye we notice that the bottles containing tablets in which camphor is incorporated have a beautiful display of sublimed camphor; that other tablets have apparently lost some of the volatile oil once contained within them; that others have changed color. We begin to realize that we may have shown poor judgment and exercised extravagance rather than economy. We begin to realize that our remedies have deteriorated, and begin to doubt their efficacy, especially when the test of use does not produce the anticipated effects.

The danger is not alone from deterioration or decomposition of contained material; the whole mass may be dangerous as if shot from a blunderbuss. I recall a case where quinine pills were given to a patient who eventually died and all the pills, seventy-two in number, were found, at the autopsy, impacted in the intestines, like a bunch of cherry-stones, the evident cause of death.

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PREPARING INFUSION OF DIGITALIS.

J. Leon Lascoff, in the *Physicians' Drug News,* points out the necessity to manufacture a true infusion and bear certain important facts in mind in doing so. (1) The quality of the digitalis, and (2) the method of preparation, utensils and time necessary.

First. In selecting the leaves always purchase those which cost the most and which bear the guarantee label and date of selection. Whether the leaves should be the first or second year's crop, wild growth or cultivated, is not to be considered in this paper, as this question has not yet been definitely decided by authorities; but I have found, says the author, through personal exeperience that the leaves purchased from a well-known British house bearing the certificate label of purity and date are the best for manufacture of infusions; and I have come to this conclusion as the result of experiment by purchasing four different qualities of leaves at prices ranging from fifty to eighty-five cents per pound.

Second. Just as important as the quality of the leaves is the method of manufacture. One must always follow out the instructions of the United States Pharmacopœia, so pay strict attention to the utensils used and to the time occupied in making the infusion. Only porcelain or glass dishes should be employed; no metal or enameled dishes should be used for obvious reasons. After the preparation has been allowed to remain standing for one hour, well covered, the remaining leaves should be placed in cheese cloth and squeezed in order to get out all possible strength, and then the entire liquid properly filtered. Although the Pharmacopœia requires the addition of alcohol, I think it could be just as well omitted, if only for the reason that the pharmacist would not be tempted to make up a stock solution. Physicians frequently prescribe also infusion of digitalis of different strengths, mentioning the quantity of the leaves, and in such cases alcohol should not be used.

I take this opportunity to criticise the contemptible habit of some pharmacists of making the infusion from the fluid extract. It is true that every minim of the extract represents one grain of the drug. Still we must not forget that the fluid extract is made with alcohol and represents all the ingredients of the original product, including the heart stimulant and vasomotor constrictors—exactly what the physician does not want in his infusion. The therapeutic effects of an infusion made from a fluid extract are entirely different from those intended by

the prescriber of the official infusion. The druggist who dispenses an infusion made of a fluid extract is therefore doing an injustice to the physician, patient and himself.

Whatever is worth doing is worth doing well, and this most certainly applies in this case when human safety is at stake. As an illustration regarding the various qualities, grades and prices of digitalis leaves on the market, I had four specimens examined by a physiological chemist, with the results as follows:

	M.L.D.	Strength	Cost lb.
No. 1.....	12.3 c.c.	54%	55 cents
No. 2.....	10.0 c.c.	67%	65 cents
No. 3.....	10.0 c.c.	67%	70 cents
No. 4.....	8.3 c.c.	80%	85 cents

This means that in specimen 1, the poorest grade, it required 12.3 c.c. of the infusion to kill a guinea pig of normal weight, and that the total percentage of drug strength compared to the ticture was 54%.

No. 4, the best grade, required only 8.3 c.c. of the infusion to kill a pig of the same size with a total percentage of 80.

We see then that No. 1 is the weakest and costs the least, and No. 4 the strongest and costs the most, and yet the aggregate amount of the cost for a prescription for 250 c.c. is so trivial that it must be computed by fractions of 1%.

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ACTION OF PHENYL UREA.

The *Journal A. M. A.* quotes Sewaki that phenyl urea occurs in light, brownish, white fluorescent crystals, which are soluble in boiling water, alcohol and ether. It was first made by the author in the beginning of 1911, who has since then made a study of its properties and presents a preliminary report. In small doses it affects only motor centers; in large doses, motor and sensory nerve centers are affected as well. When a maximum dose is given the affected animal falls into a deep sleep, and awakes from four to ten hours afterwards, without any ill effect. During sleep the cardiac and respiratory centers are not interfered with. Repeated injections of phenyl urea induce accumulation to a very slight extent. One of the special features which the author has studied is the effect of phenyl urea on strychnine convulsions, which it was found it had the power to restrain.

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THERAPEUTIC USES OF ANILINE DYES.

Otto Sachs, in *Wiener Klin. Woch.*, states that a number of cases have been observed in which workers with aniline dyes have suffered with various skin affections. In some of these the presence of the aniline material in the tissues was demonstrated histologically. A series of experimental observations have been carried out on rabbits. Various aniline dyes were rubbed in at different intervals of time on the inner surface of the ears of the rabbits. When the skin was examined histologically it was found that similar results were obtained in a large number of cases. Control experiments were made with white lead, Berlin blue, cinnabar, and sienna, and these were negative. In a second series of experiments subepithelial injections of scarlet red oil were made into the ears of rabbits, and Fischer's results were confirmed by the overgrowth of epithelial tissue which ensued. The same results were obtained with aniline dyes, which differed chemically from scarlet red. For therapeutic use the author found that a 10% ointment of azo- and tri-phenylmethane dyes was valuable for granulating wounds, chronic ulcers of the leg, etc. Brilliant red was found to excel scarlet red in rapidity of action. The conclusion drawn from the author's researches is that the effect upon epithelial tissue is not specific to scarlet red, but is shared by other aniline dyes.

ELECTRO-THERAPY.

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THE CAUSES OF PAIN IN THE UPPER RIGHT QUADRANT OF THE ABDOMEN AS DETERMINED BY MEANS OF THE ROENTGEN RAYS.

By GEORGE E. PFAHLER, M. D.

(In the *New York Medical Journal.*)

EVERY practitioner knows how commonly the symptom of pain in the right upper quadrant of the abdomen occurs, and how difficult it is to determine its cause. Any definite aid, therefore, will be appreciated by everyone.

In Röntgen diagnosis, as by any other method, one should have clearly in mind the varying possible causes of this symptom. The more thoroughly a case is studied by other means, and the more nearly the diagnosis is narrowed to one or two causes the less Röntgen work will have to be done. Careful fluoroscopic examinations and good plates must be made, and each case will require probably from six to a dozen plates. Gradually the diagnosis is worked out. It is seldom that all the required evidence will be obtained in a single examination. The laity still expect one to see through the patient as one would observe a landscape through a window.

Thoracic causes—Irritation extending along the course of the intercostal nerves such as may be produced by pleurisy, pleuritic adhesions, abscess, or other inflammatory conditions of the lungs, may be demonstrated by means of the rays to the most accurate degree. Irritation at the roots of the intercostal nerves may be reflected into this section of the abdomen. When this irritation is produced by some pathological condition which affects the vertebræ, such as neoplasms, osteoarthritis, or tuberculosis, the cause can be most definitely demonstrated by a careful röntgenological examination. These causes which exist above the diaphragm, are of course the least common, and I will not go into further detail, but I have seen and demonstrated röntgenologically each of these causes of pain in the region under discussion. I will confine my more detailed descriptions to the pathological conditions which exist below the diaphragm and in the order of their topographical distribution as one moves downward, and will omit from my consideration any reference to the associated clinical symptoms, since that phase has been ably presented by Doctor Daland; but I would not have any one think that I do not consider most carefully all other evidence in each case.

Subdiaphragmatic abscess—In this condition the right side of the diaphragm is distinctly higher than the left. It preserves its curve, remains fixed and immobile, and the total width of the shadow from the upper surface of the diaphragm to the lower border of the liver is increased.

Biliary calculi—The presence of biliary calculi is perhaps most often thought of as a cause of pain in this region, and yet because of some peculiar distribution of the pains, such investigation may be left until the last.

In many instances biliary calculi can be demonstrated by means of the rays, but when not found one can not conclude that there is none present. For their demonstration, most depends upon the degree of density of the stones as com-

pared with the surrounding tissues. At best a most careful technique is required, and this I have described elsewhere. In each instance, one must prove that they are not in the kidney, by projecting their shadow outside of the kidney shadow, and by making a preliminary kidney examination.

In many instances one can arrive at the diagnosis of biliary calculi by eliminating other causes of the pain, even though the stones can not be directly demonstrated.

Duodenal, gastric, colonic, and hepatic adhesions—Adhesions in the gall-bladder region, I believe, are more often the cause of pain in this section than the presence of gallstones. These adhesions may be secondary to any inflammation, traumatism, or new growth in this region. I have demonstrated the effect of these adhesions in about seventy-five different patients. In most instances they have not yet been operated upon, but in each instance, so far, the operations have confirmed my findings.

Gastric adhesions are associated with a change in outline and position of the stomach, and an interference with the normal peristaltic waves. The stomach is drawn upward and to the right as a rule. In interrupting this position, however, one must bear in mind that in stout subjects (and many of this class of patients are stout) the stomach is always higher than in the slim or normal subject.

Duodenal adhesions draw a portion of the duodenum higher than normal. Then the descent of the duodenum is more abrupt, and at times it may pass downward to the left of the pylorus instead of to the right, as is normal. One can readily understand the nagging, aching pain in these cases, which occurs especially where there is some associated inflammation of the gall-bladder, duodenum, or stomach and which occurs especially several hours after a meal, for it is at this time that the angle formed by the adhesions is most acute, and the peristaltic waves are strongest in order to carry the food up over the highest point. Each time that these waves or the food contents pass, there is a pulling on the surrounding structure, which causes the pain. This explains, too, the intermitting character of these pains, for peristalsis in the stomach is not constant as one might suppose. It is excited by various factors, and at times is strong and at others weak. Then, too, the pain is more marked when inflammation is present.

Adhesions of the hepatic flexure and first portion of the transverse colon to the under surface of the liver and gall-bladder region are least common, but by no means infrequent. They are usually combined with duodenal adhesions. When present, it can be readily understood that any movement of the semisolid or gaseous contents of the bowel will add to these pains.

Gastric ulcer—The pains of gastric ulcer are generally not confined to the right upper quadrant of the abdomen, but may radiate to this region or be primarily there. The ulcer itself can be definitely demonstrated only when it is of the perforating type. Its associated effects, however, can often be demonstrated, and these are spasmodic contractions, or an interference with the peristaltic wave. The spasmodic contractions due to ulcer most often present themselves at about the middle of the greater curvature, but they may also be seen at times at the pyloric end. These are demonstrated only by a careful fluoroscopic examination.

Duodenal ulcer may give pain in the right upper quadrant, near the median line. At times spasmodic contractions of the duodenum may be demonstrated, as associated with this condition, by a careful fluoroscopic examination.

Gastric carcinoma—The pain of gastric carcinoma, especially of the pyloric

region, may be present in the right upper quadrant of the abdomen. This can be demonstrated, usually most clearly, and I believe, far earlier than by any other means excepting an exploratory operation. It produces a change in the outline, lumen, position, and peristaltic waves of the stomach.

Renal calculus—Renal calculus as a cause of pain in the right upper quadrant of the abdomen should be thought of early and eliminated. In a number of cases the appendix had been removed, and at times a gall-bladder operation performed when the real cause of the pain was found to be a renal calculus. The pain associated with renal calculus is usually felt rather posteriorly, but it may be vague and at times felt rather anteriorly. A ureteral calculus may give the same character of pain.

In the hands of competent men, urinary calculi are shown in at least ninety-eight per cent of the cases. Therefore, when this examination has been carefully made and the findings are negative it can be practically dismissed from consideration.

Renal abscess—This condition, because of its destructive effect, will enlarge the pelvis of the kidney, or make an abnormal cavity in some portion of the kidney. It will often force the kidney shadow outward from the spinal column. This latter condition can at times be demonstrated by an ordinary X-ray examination. The size and position of the pelvis of the kidney can be demonstrated by a combined cystoscopic and X-ray examination, in which the ureters are injected by collargol or cargentas and at the same time a number of röntgenograms are made.

Perinephric abscess—This condition can at times be demonstrated, but more often by exclusion than by direct examination. For instance, if a tumor mass or swelling is felt in the right upper quadrant of the abdomen, as I have experienced, in order to prove that it is a perinephric abscess, one will have to show that it is not connected with the liver. This can be done by proving that the tumor does not move with the liver. Then the stomach and duodenum would have to be clearly separated from the tumor and show that any interference with the lumen of the stomach or the passage of the duodenal contents is due only to pressure. Then the bowel would have to be clearly separated from the tumor. In all such work, careful, combined palpation and fluoroscopic examination are necessary. Such procedures are always a danger to the operator.

Colonic kinks or constrictions—I find, not uncommonly, kink or reduplication in the first portion of the transverse colon associated with pain in the upper right quadrant of the abdomen. In order to arrive at such a conclusion one should follow a meal through the colon, and then after this kink or constriction has been demonstrated by the shape and interference with the passage of the colonic contents, one should cleanse the bowel, and then inject per rectum. The mixture will be obstructed and prove again that the constriction is a true one.

This brief review of the conditions causing pain in the right upper quadrant of the abdomen, which can be demonstrated by the Röntgen rays, is intended only as a guide to the line of investigation that should be pursued. I have omitted reference to technique. Investigations of these obscure conditions test the ingenuity of the most skillful röntgenologists. The technique for each line of investigation has been fully described in the literature of röntgenology, and to include it here it would have to be either incomplete or entirely too voluminous.

THE TREATMENT OF MUSCULAR INJURIES BY GRADUATED CONTRACTION.

Smart and Bristow, in *The Lancet*. describe a method which they adopt for the treatment of muscular and joint injuries, and for the redevelopment of wasted muscles. The treatment consists in the stimulation of the muscles by means of an induced current, but it must be clearly understood that no virtue is claimed from the electricity *per se*. It is simply a means to an end, that end being muscular contraction with the restoration of muscle function.

The instrument they find most satisfactory is one with few turns in the primary and secondary windings, and therefore of low self-induction. It is so arranged that the degrees of contraction can be controlled by manipulation of the central core, in preference to the more usually adopted "sledge" method of control. The exact form of apparatus used is of little consequence, provided it can be controlled so as to produce a graduated contraction of the muscle—that is, minimal, submaximal, or maximal contractions.

Every muscle in the body is in a state of slight continued contraction—*i. e.*, muscular tone—and if injured this condition of tone is at once altered. A strained muscle is relaxed, stretched and inflamed, and so is incapable of complete voluntary contraction. In many cases this disability, primarily muscular, shows itself by impairment of the function of the joint on which the muscle normally acts. The other muscles which control movement of the joint act of necessity at a disadvantage, one of their number being thrown out of action. The result of this is that the joint is affected in two ways: first, by the original muscular strain; and secondly, by the excessive strain caused to the other muscles, which work at a disadvantage without their fellow, and thus still further complicate the impairment of function in that joint.

The condition of impairment is the immediate result of a strain to a muscle or muscles which control the movement of a joint, and is of importance because the joint is liable to become further crippled owing to muscular wasting, the formation of adhesions, and the laxity of the whole structure caused by the absence of the normal muscular tone. That the seriousness of the early condition is not always realized is shown by the fact that following some slight injury —*e. g.*, a sprain—one often gets a history of months of disability and pain, all of which could have been avoided if the secondary results had been prevented from supervening by the proper treatment of the condition from the first.

The type of contraction produced so closely simulates the physiological contraction of muscle that it is indistinguishable from a normal voluntary contraction. The contraction can be accurately controlled. Starting from zero, it may be gradually increased to the maximum contraction which the muscle acted on is capable of without damage, and the muscle may then be allowed to relax just as gradually.

A healthy group of muscles, when acted upon in this way, can be made to contrast and relax rhythmically, so as to cause painless production of the movement of the joint on which they act. In order to describe the actual method of applying this form of treatment it will perhaps be best to describe the treatment of an actual case and then to generalize.

Take, for example, the treatment of a simple strain of the adductor longus muscle, the so-called "rider's strain." The patient is placed on a couch with the lower extremities bare. One electrode is placed under the knee of the injured leg. The knee is slightly flexed, abducted, and externally rotated. The other electrode is held in the operator's left hand, gripped between the thumb and first finger, and

is brought into contact with the adductor longus. The electrode being in contact with the muscle, the muscle substance is grasped by the fingers and thumb of the hand, so that the amount of contraction may be felt. The operator's right hand controls the soft core of the coil, which is inserted and withdrawn rhythmically at a rate of about sixty times a minute. Each time the core is inserted the muscle contracts and *vice-versa*, and the amount of contraction is in direct relationship to the degree of insertion of the core. The electrode is moved about from place to place on the muscle, being moved only when the minimal current is passing, as otherwise pain is produced. The muscle is treated in this way for about twenty minutes, and no strapping or bandage is applied. This treatment is carried on once daily for about a week, then the patient is permitted to ride .(hack). Treatment is then carried on daily for another week, with exercises in addition for the whole adductor group. At the end of a fortnight, in an ordinary case, the patient resumes hunting, being seen perhaps twice more.

Certain points in the technique which we employ may perhaps be worth mentioning.

It is necessary that the patient lie absolutely relaxed, and that no current sufficient to cause a contraction be allowed if he move or strain in any way. The right hand controls the intensity of the stimulus, whilst the left gauges the effect on the muscle; therefore the pain which a sudden movement on the part of the patient would cause can generally be prevented when one has had a certain amount of practice in treating cases. The part of the muscle which, when stimulated, gives the best contraction of the whole muscle, varies slightly in different patients, but can readily be determined in each case. It is well to remember that the electrode should not be moved except when the core is fully withdrawn. If this be not done the patient may get a painful stimulus as the electrode is drawn along the skin, and then naturally tends to resist the next stimulus.

The length of daily treatment varies not only with each particular case, but also with the particular muscle or group of muscles under treatment—*e.g.*, much more time may be spent on a muscle, such as the deltoid, than would be possible with the small muscles of the hand or foot. Over-stimulation is followed by stiffness some hours later, and treatment on the following day quickly produces fatigue.

The coil should be so adjusted that, when the electrode is applied to the muscle and the core of the coil withdrawn, no contraction takes place. The contraction, when produced, should be of the whole muscle and not a local tetanus under the electrode. The secondary passive electrode may be placed under the knee if the leg is being treated, but in the case of the arm it is better placed between the scapulæ or in the lumbar region; if the lumbar region muscles are being treated the secondary electrode is placed between the scapulæ.

That the more usually adopted methods of treatment—viz., massage and movements—are quite capable of effecting a cure in many of those cases of muscular and joint injury is, of course, certain. However, there are cases in which the results of massage are very disappointing, and in which the muscles do not recover at all, or only very slowly. Again, it would seem that the results are more quickly obtained by this method than by massage.

It would seem that an important point of difference between massage and electrical stimulation is that the effects of the former must be produced by circulatory changes almost entirely, whilst in the latter the beneficial results are due to the stimulation bringing about active contraction of the muscle, with all the attendant changes, chemical and circulatory, of such contraction.

That the ideal treatment of an injured muscle is to make it perform active contractions against resistance is generally accepted, but this, in the case of a badly strained or wasted group of muscles, is not possible. In a case of "rider's strain" it is often possible to make the patient adduct the thigh, but this is by means of the undamaged members of the adductor group. The strained and elongated adductor longus remains out of action whether the thigh be adducted or not.

The scope for the employment of this method of graduated contraction is not limited to the treatment of injuries. Some of the cases of chronic joint disease—namely, those in which the symptoms which affect the patient's comfort are due to the muscular condition—can be considerably improved, although, of course, the actual joint changes remain unaffected. In the post-operative treatment of certain lesions this method must be of value—*e.g.*, in the case of the wrist-joint it is possible to contract the muscles of the forearm so as to move the tendons at the wrist (without interfering with the dressing), thereby preventing adhesions and wasting of the forearm from disuse. We have also used this method in the treatment of fractures with very good results. It is also possible to contract unstripped muscle, and we have treated chronic constipation due to atonic condition of bowel wall with very encouraging results in a few cases. The results are too recent (twelve months), and too few (five), to show whether this result is permanent or only temporary.

At this stage the use of graduated contraction in dealing with adhesions which have already formed must be briefly discussed. The ordinary plan of dealing with adhesions which have formed—viz., forcible manipulation and breaking down under an anesthetic—often yields disappointing results. The joint may be freely movable under the anesthetic, but in twenty-four hours may become distended with fluid and very painful, and often after some weeks of vigorous massage the range of movement is still markedly restricted.

The joint is stiff from two causes—the one adhesions and the other muscular spasm. If before the forcible manipulation is undertaken, the muscular spasm can be overcome, at any rate in part, the chances of success are vastly improved. The increased amount of movement allowed by overcoming this spasm is sometimes astonishingly great, for if the muscles be contracted regularly the adhesions are probably stretched, and if only weak may give way altogether. If, when the spasm has been got rid of, the joint still be stiff, the adhesions can at this stage be broken down under an anesthetic with much greater chance of success.

It is by a combination of methods that the best results may be obtained, and the object of this paper is to bring out the importance of graduated contraction, and not to belittle the other methods in general use. The results we have obtained show that in some cases, at any rate, graduated contraction is essential to recovery, and that in less severe cases the time necessary to complete recovery is shortened.

THE TREATMENT OF OPIUM POISONING BY THE FARADIC CURRENT.

By Frederick Taylor, M. D., Lond., F. R. C. P., Lond.
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(In *The Lancet*.)

One or two experiences in the treatment of poisoning by opium have led me to consider carefully the methods of treatment usually prescribed, and especially the value, mode of application, and time of the application of the faradic current.

The treatment of opium poisoning may be divided into the following parts: the evacuation of the stomach; the use of antidotes; the prevention of a fatal somnolence or coma; and the maintenance of adequate respiration. On the first two

heads I propose to say very little. The evacuation of the stomach is obviously desirable to prevent the absorption of so much of the poison as has not so far been absorbed; it does not touch what is already in the system. But not only in poisoning by opium taken directly into the stomach, but also in poisoning by subcutaneous injection of morphia, lavage of the stomach is desirable, because morphia appears to be eliminated from the system by the stomach mucous membrane, and, it is said, may be reabsorbed and circulate again.

The antidotes commonly employed are atropine injected hypodermically, and dilute solution of permanganate of potassium, of which large quantities are introduced into and removed from the stomach, while a small quantity is left in. Observations show that the effects of the antidotes are often rather slow in being manifested.

I have rather to consider these cases, or those stages of opium poisoning in which the patient is becoming dangerously comatose, and difficult or impossible to arouse by ordinary measures; in the last phase of which the respiration is reduced to a frequency of ten, eight, or six per minute, and becomes irregular and gasping.

Since the chief clinical effect of an overdose of opium is somnolence increasing to coma, which itself may terminate in death by gradual slowing and cessation of respiration, it is natural that efforts should be made to prevent the coma by every possible means; on the understanding, which we have from experience, that a poison like opium, as compared with a structural lesion, is slow in its operation, produces its maximum effects with a rapidity proportionate to the amount absorbed, and gradually loses its influence as a result of elimination. Failing adequate elimination, or neutralization by antidote, the respiratory center is involved, and death takes place.

Now, in spite of the modern method of antidotes, there is no doubt that cases occur in which the coma becomes so profound as to call for some other methods of treatment, at any rate from those who do not like to stand by without any attempt at succor. These methods are, of course, well known to all, but I will repeat them from a text-book much read some years ago, viz., "Forensic Medicine," by Dr. W. Guy. After advising evacuation of the stomach by stomach-pump or emetic, he says:

"If the patient is comatose, cold water should be freely dashed over the face, head, and neck till he is somewhat roused from the stupor, and he must then be kept awake by causing him to walk rapidly between two assistants, shaking him and shouting at him. In small apartments, where it is inconvenient to move the patient about, he may be kept roused by flicking the hands and feet with a towel. A current of magneto-electricity passed from the spine through the chest and artificial respiration have been used in extreme cases."

Now, no doubt there is an appearnce of pure empiricism here, because the treatment by rousing is directed to preventing the onset of a condition which is not in itself fatal; and if it were the fact that opium attacked the respiratory centers and slowed the respiration fatally without first causing complete coma, no amount of keeping awake or rousing would of itself be effective to prevent death. Experience, however, shows that the respiratory difficulty is not pronounced or dangerous until the patient is deeply comatose, and hence the "rousing" method may seem to have its justification. The amount of rousing need only be proportioned to the apparent dose of the poison, but, of course, it can easily be conceived that a dose may be so large as to prevent any response of the cerebral centers to the stimuli applied.

While, however, most writers recommend stimulations of the surface, both directly mechanical and electrical, either for the purpose of rousing the patient from his somnolence, or of exciting his respiratory centers, there are some who regard the whole of this procedure as not only useless but barbarous; and even among the former class the excessive use of stimulation, whether mechanical or electrical, is deprecated, on the ground that it may exhaust the strength of the patient.

To some of the objections to external stimulation I should agree, or rather I accept the objections to some kinds of external stimulation. I think that it is not expedient to walk a patient about who is poisoned by opium, because if the dose is at all large there will inevitably come a time when he will be unable to stand, even though supported by two friends or policeman; and up to this stage he is not really in danger from failure of the respiration. Other stimuli, such as shaking the patient, shouting at him, pinching him, or flicking him with wet towel-ends, or dashing water over his face, are not very efficient and can, in my opinion, be replaced by the faradic current applied indiscriminately to all the muscles of the trunk or limbs.

The faradic current has been advocated on two grounds—one that it will help to "rouse" the patient by general peripheral stimulation; the other that it will excite the respiratory centers. As a general peripheral stimulant it is directed to be applied to the limbs sharply; by some writers the use of the wire-brush electrode is specified as being more directly stimulating to the cutaneous nerves. As to the time at which the faradic current should be used few directions are given. One writer orders it when the patient is somnolent, a condition which is probably implied by other writers when they give no directions at all, since somnolence, less or more, is the chief evidence that the poison which has been taken is beginning to operate. Some writers only refer to faradism in connection with failing respiration; and some of these again recommend galvanization of the phrenic nerves, without giving directions as to how it is to be done.

For further information on this subject I have referred to some works on electro-therapeutics. In Dr. Lewis Jones's standard work on this subject, I find under the head of "Cardiac Failure" the following:

"The aid of electricity is often invoked for the purpose of resuscitation when death appears to be imminent. It may be applied either in the form of brisk general cutaneous stimulation, as in cases of narcotic poisoning, or with the special object of stimulating respiratory movements or of acting upon the heart itself."

He then goes on to say that application to the cardiac region does not readily affect the movements of the heart, and the results, if obtained, are as likely to do harm as good. For stimulation of the respiratory centers he recommends an induction coil with a long secondary wire, and a metallic brush electrode, applied indifferently to any part of the body, as this method of application is much less likely to produce fatigue or exhaustion than the use of moistened electrodes. He then gives directions for the stimulation of the phrenics in the neck by means of an induction coil with small moist electrodes, and says that it has been successfully carried out in asphyxia and in chloroform poisoning. These general directions may be taken to cover the case of opium poisoning, but this particular contingency is not separately considered.

In a recent American work on electro-therapeutics the author says that paralysis from opium, stramonium, arsenic, etc., is to be treated by general faradization. But I find nothing about the treatment of narcotic poisoning, or of the narcotic effects of opium, or about stimulation of the phrenic nerves.

TECHNIQUE OF CATAPHORESIS.

Sibley, in the *American Journal of Dermatology*, gives the following practical points in the administration of the treatment:

The current should be turned on and off gradually, otherwise the patient would experience unpleasant shocks, especially when strong currents are being used. If the strength of the current is obtained gradually, the increase of the current will not be so perceptible to the patient, and a much stronger current may be used than would be the case if the increase was suddenly applied.

If there happens to be any excoriation or uneven thickening of the skin over the area that is to be treated, some collodion should first be painted over the parts, which will prevent the current from penetrating in these regions; otherwise the current would concentrate itself here, and give rise to pain or a burn leading on to a bleb with a subsequent ulcer which heals sometimes very slowly. Care should always be taken that the electrode which is being used does not touch the naked skin anywhere, and that the layers of lint which are used to cover the electrode, project well beyond its margins.

Several layers of the purest lint should be used to cover and protect the active electrode, and the drug should always be dissolved in distilled water, as ordinary tap water nearly always contains various metallic and other impurities, which might considerably influence the result obtained.

Oils and fats are non-conductors of electricity and therefore it is useless attempting to cataphorese a drug through the skin until all oily secretions or fatty applications are first removed by cleansing the area well with alcohol or ether. It follows that in cases, for instance, of alopecia of the scalp, the patient while undergoing this treatment must avoid putting ointments or any brilliantine containing oil on the head. Useful applications may be made with glycerin in the place of oils.

A large number of different diseases can be most successfully treated by ionization, such as alopecia, epithelioma, chloasma, keloid, lupus (erythematous and vulgaris), morphea, scars, ringworm, sinus, ulcers (simple and rodent), etc.

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X-RAY NOTES.

George Earl, in the *Journal-Lancet*, asserts that the question of dose in X-ray treatments is primal. All things being equal, the closer the patient is to the tube, the more light is given. The strength of the light is in proportion to the distance from the center of the focus to the skin; for instance, an exposure of one minute at four inches from the focus point is equal to an exposure of four minutes at eight inches. The rays spread like a pyramid, hence with increasing distance fewer rays strike each part of the skin. The strength of the light is of as much importance as the time of exposure or the distance and the milliamperemeter or the appearance of the tube can not be relied upon for this. The hardness or softness of a tube must be considered, for the rays from a hard tube are more penetrating. With so many factors in reckoning the dose, the value of a dose-meter is easily seen. We need some test by which we can arrive at the normal dose, that is, what the average skin can stand at each treatment.

Radiometer x (Sabourand and Noire, Paris) is the best form of dose-meter. It consists of small discs of a greenish actino-active substance placed on little pieces of paper which are fastened one-half of the distance from the focus point in the tube to the patient's skin. These discs must be at least 1 cm., or, better, 2 cm. from the tube, otherwise they will heat it and cause its breakage. For instance, if the tube is 18 cm. in diameter and the disc is placed 1 cm. from the tube, the skin of the patient should be 20 cm. from the focus point. A simple

way to fasten the discs is by mucilage on a cardboard bent so as to fit into the bowl of the lead protection-glass. The disc should be covered with a bit of black paper to prevent the daylight from acting in opposition to the X-rays. The greenish color of the disc is reduced to brown. For comparison there is furnished a test-scale, the green and the brown colors of which are permanent and nonchangeable in any light. The green disc used is tested from time to time, and when the brown of the scale has been reached, the normal or average dose, which a patient can stand without injury, has been given. After a little experience one does not have to test more than once or twice during a treatment. The comparison between colors must be made in the daylight, as artificial light does not give the correct color. Each disc can be used three times if placed in sunlight for a half hour, which reduces the brown color back to the original green. The placing of the disc or cardboard in the way of the rays does not influence the treatment or interrupt the rays.

The effect of an X-ray treatment lasts two or three weeks. We can not tell what effect a dose has until after eight or eleven days. This shows the folly of trying to give small doses of X-ray, say, every two or three days. The only safe way is to give one dose every three weeks, and measure it by the disc. A normal dose may cause atrophy of the skin if repeated several (six or seven) times, and the patient should be warned of this probability.

In X-ray dermatitis we have first, second and third degree burns. If we give two normal doses at one sitting we get an erythema of the skin. This usually appears about eleven days from the time of the treatment. From three normal doses at one sitting, blisters will form after eight days. These will break open and heal without a scar. If a still larger dose, say, four normal, is given the skin will blister and then become white. The white spots will slough off and leave an ulcer, which will heal, but will become atrophic with thin skin. Dr. Bock, of Norway, has given a formula known as Bock's liniment for X-ray dermatitis.

Amyli triturati... } aa	50
Talci albi pulvis. }	
Glycerini	20 to 25
Liquori plumbi subacetatis diluti	150 to 200

M. Sig.: Apply to skin and cover with cotton.

Note—Keep well corked and shake before using. The preparation does not keep well and should be freshly prepared quite often.

The position of plate work in radiology is assured. No one questions its value, but the fluoroscopic screen has not as yet come into its own. A few men are making use of it, but not so generally as with the plates. There are many places where a fluoroscopic examination is indicated; for instance, in intrathoracic goitre such an examination will demonstrate the gland moving up with swallowing and down with inspiration. This is an important differential point in comparison with aortic aneurism and would not be demonstrated by a plate. In the bismuth examination of a stomach we can place a hand on the abdomen and move the organ around. If the stomach is fixed in position, as from an ulcer on the posterior surface, adherent to the surrounding tissues, this point can be clearly determined, a thing difficult by the plate method. In the examination of the heart and aorta it is necessary to view the organs at different angles. An important point is that of accustoming the eyes to the dark-room necessary for fluoroscopic work. The vision will be increased 200 points by waiting in the dark-room before beginning the examination.

THERAPEUTIC BRIEFS.

Ozena.—

Iodoformogen (Knoll)..
Acidi borici..... } .....aa 5ij

M. Sig. For insufflation.

Ptyalism.—

Formaldehydi (medicinal).....fl. 5j
Thymolis .....gr. x
Tinct. Benz. Co.....fl. 5ij
Alcoholis .....ad. fl. ℥iij

M. Sig. Teaspoonful in a wineglassful of water as a mouth wash.

Sweating Hands.—

Acidi tannici.....℥j
Aquæ cologn.....fl. ℥ij
Alcoholis .....fl. ℥vi
Aquæ.....ad. fl. ℥viij

M. ft. lotio.

Sig. Bathe hands with lotion twice or thrice daily.

To Remove Silver Nitrate Stains From Skin.—

Hydrargyri bichloridi..... }
Ammonii chloridi..... } .....aa 5j
Aquæ .....℥j

The stain is said to disappear immediately.

Ovaralgia.—

Bird, in *Bull. gen de. Therap.*, recommends:

Extract of belladonna.....0.30 gram.
Ipecac .....0.60 gram.

M. ft. pills No. xx.

Sig. Two or three pills a day.

Tinea Versicolor.—

A writer in *Union médicale du Nord-est* gives the following formula for an ointment in tinea versicolor:

Resorcinol..... } of each, 1 to 3 grams.
Salicylic acid.....
Precipitated sulphur.....5 to 15 grams.
Hydrated wool fat... }
Petrolatum..... } of each, 25 grams.
Lard.....

M. ft. unguentum.

Subacute Rheumatism.—

Openheim advises the following local application:

Mentholis.....gr. xv
Guaiacolis .....℥j
Methylis salicylatis.....℥j
Olei camphorati.....ad. ℥iv

M. ft. linimentum.

Sig. Use locally on affected parts.

Rhinopharyngitis.—

Gallois uses in these cases, if acute and sthenic, a phenol spray (1 to 100); if less intense he advises the following, likewise in a spray:

Phenolis.....
Sodii salicylatis..... } .....aa gr. iv
Sodii biboratis.....
Aquæ .....fl. ℥ij

M. ft. mistura.

Scabies.—

The patient is to take a hot bath every second evening, after which freely apply the following ointment before retiring:

Betanaphtholis.....gr. xx
Sulphuris .....℥j
Balsami Peruvianæ.....fl. ℥j
Unguenti zinci oxidi.....℥j

M. F. unguentum.

Sig. Apply locally twice daily to affected parts.

Spasmodic Croup.—

In correcting the underlying catarrhal condition and warding off the regular nightly attacks, Stevens has found the following prescription valuable:

Tinct. aconiti.....m.ij
Vini ipecac.....℥j
Potassi bromidi.....℥ss
Potassi citratis.....℥j
Syr. tolu.....℥j
Aquæ.....ad. ℥ij

M. Sig. Teaspoonful every two or three hours to a child two years old.

NOTES AND MISCELLANY.

SYPHILITIC CACHEXIA.

IN the cachexia of syphilis, particularly during the late months of the disease, Cord. Ext. Ol. Morrhuae Comp. (Hagee) has proven of much value, and is employed for this purpose in a routine manner by many physicians. Its therapeutic power as a reconstructive in syphilitic cachexia rests upon its well-known property of improving bodily nutrition. Cord. Ext. Ol. Morrhuae Comp. (Hagee) is a blood-maker of high order, a feature that makes it of particular value in syphilitic debility. Its employment will be of much aid to the usually resorted-to therapy of syphilis, and gratifying results will be noted from its administration.

DYSMENORRHEA.

Professor Davenport, in his admirable work on the Diseases of Women, Dr. L. G. Boyd, Tunnelton, Ind., reviewing, adds:

How can we prevent dysmenorrhea? It can be done by keeping the patient under morphine, but this is a barbarous solution of an important problem. It in fact does not solve it. Morphine is inadmissible and improper in these cases. It produces derangement of the secretions and tends to establish a drug habit that will make life a burden. I have long employed a remedy that not only relieves the pain, but produces no habit and is not dangerous. I refer to Dioviburnia. It is a most valuable uterine tonic, anti-spasmodic and anodyne of exceptional worth. I rely upon this remedy to prevent dysmenorrhea, which, as Professor Davenport truly says, is seen in almost all, if not in all women. I have my patients who suffer with dysmenorrhea to take Dioviburnia, beginning two days before menstruation is due and persist in it until the period has passed. I give it in doses of one to two teaspoonfuls every three hours throughout this time. When this direction is followed I have found that my patients go through the period without pain. The adoption of this treatment, I may say also, has brought me many grateful compliments.

Where the patient is very nervous, having the tendency to hysteria, neuroses or uterine congestion, I administer Neurosine one part, in combination with two parts of Dioviburnia, which always gives relief.

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ST. LOUIS, MO.

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HENRY R. STRONG, PUBLISHER T. G. ATKINSON, M. D., EDITOR

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Vol. XL. St. Louis, Mo., August, 1912. No. 8.

EDITORIALS.

THE DOCTOR AND THE LAW.

WE have frequently pointed out, and we now reiterate, the importance of the general practitioner of medicine possessing at least what may be called a working knowledge of his relationships to the law. The fact is, the term "medical jurisprudence" is somewhat of a misnomer, since there is no distinct body of the law peculiar to medicine or to physicians. The law applicable to the physician is simply the old rules of equity and justice, grounded in the common law, but of course extended and interpreted to meet the new conditions which arise in the course of civilization.

The legal presumption is that every man is presumed to know the law, or, to state the obverse, ignorance of the law excuses no one. But how many physicians even know the rules of law which apply to their own calling? Yet there are peculiar reasons why the physician should be even better informed than his lay neighbors upon matters of this kind. Unlike the ordinary man of business, for instance, he can not consult with his attorney upon such occasions as demands an extraordinary exercise of that "judgment and care" which the law exacts of him. And the cases are numerous where reputable practitioners, of unquestioned professional attainments, have been ensnared into a web of circumstantial evidence through nothing in the world but ignorance of the legal significance of their perfectly innocent and justifiable acts. Guilty of nothing but ignorance of the law, that ignorance has cost them money and reputation, and not infrequently their future livelihood.

It is true, of course, that a large proportion of malpractice suits are not brought in good faith. No doubt the majority of them represent shrewd or bare-faced attempts at blackmail, and have their origin in the rapacity of some shyster lawyer. That is all the greater reason for the practitioner, who stands in hourly danger of such attempts, to be thoroughly equipped to avoid even the appearance of evil, upon which such suits may be predicated, or, if he can not avoid the appearances, so that he may so safeguard all his steps as to come out of the trouble that is forced upon him with triumphant vindication. And it must be conceded that a certain percentage of malpractice suits are brought in good faith; hence the importance of the physician's having a clear understanding of what he may and may not do under given circumstances.

A physician's liabilities are either civil or criminal, and his duties are either legal or ethical. Legal duties are those imposed upon him by law, ethical duties those laid upon him by his medical society, or his school of medicine. The law takes no cognizance of a breach of ethical duties, but leaves their enforcement to the bodies which created them. Indeed, it is not outside the bounds of possibility that these so-called ethical requirements may at times conflict with the requirements

of the law, in which case, of course, the law would not recognize the ethical obligation as an excuse for breach of legal duties. The law can not and will not interfere with the penalties inflicted upon the physician by these ethical bodies--for example, to reinstate a physician expelled from his society—unless the injury thereby inflicted upon him be such as to come within the range of his citizenship rights.

The criminal liability of the physician, like every other criminal liability, is fixed by statute. There is no such thing as a common-law crime. Every crime must be defined and the punishment of it definitely determined by statute. The civil liability of the physician, like all other civil liability, rests wholly upon contract, either actual or implied. Immediately upon the establishment of a relation of physician and patient, there is set up an implied contract covering certain things to be done on both sides. These are the fundaments upon which the legal relationships of the doctor rests. To go into detail is not the purpose of this editorial, but rather to urge upon our readers the importance of extreme care in all of their dealings, especially in obstetrical cases, and of informing themselves of the statute law of the State and the municipal ordinances governing the practice of medicine in the city or town in which they follow their profession. This will take care of the criminal aspect of the liability. Further, we urge the importance of acquainting one's self with the warranties which are included in the implied contract set up between doctor and patient—which may best be done by consultation with a reputable attorney. This will secure the physician in the matter of civil or damage features of his liability. The quicker every practicing physician informs himself upon this side of his practice, the better for all his interests.

OPIUM FOR PHYSIOLOGIC REST.

PERHAPS, in our recoil from the former abuse of opium, we have swung a little too far in the opposite extreme. Medicine seems to have fashions, just as manners and dress have, and nowadays it is the fashion to rail against the use of opium. Yet, we believe, if the real attitude of the most scientific and conservative of our surgeons be canvassed, it will be found that they still regard the old drug with considerable respect, and still employ it in a great many cases. It has one therapeutic virtue which to every physician and surgeon of experience—but especially to the surgeon of experience—gives it a sovereign place in the management of a certain class of troubles, and that is its power to enforce physiologic rest. In this respect, opium has no superior, if indeed it have a peer among the materia medica.

The value of physiologic rest in highly inflammatory and hyperesthetic conditions of the tissues can hardly be over-estimated. Especially is this true of the gastrointestinal tract, the pelvis, and the peritoneum. Anatomic rest is sought by the patient. Pain forces him to lie in such a position that muscles are put, as much as possible, out of action. In short, the patient is glad to go to bed to secure anatomic rest, which is gained by lying on the back, with the skeletal and systemic muscles immobile. But physiologic rest is of even more vital importance in such conditions; and physiologic rest can, as a rule, be secured only by the administration of opium. Alonzo Clark used to give his peritonitis patients enough opium to make them blue and cause them to snore. That, of course, is hardly a practice to be commended as a routine measure. But any man who has had long experience in the treatment of acute peritonitis has learned the enormous value of physiologic

rest; and the same principle applies to all acute inflammatory conditions of the abdomen and pelvis.

The utility of this treatment in these conditions is threefold. It prevents the rapid spread of infectious material by preventing violent peristalsis. The exudates surround, sterilize, and encapsulate the germs, and aid in the prevention or the plugging of visceral perforation. It prevents pain, by checking the activity of the involuntary muscles, and thus also induces the natural physiologic rest of sleep. And, finally, it often bridges over dangerous periods, when operation is risky, if not impossible, and brings about a quiet state where surgical interference can be safely and profitably undertaken.

The main idea in diseases of the character under consideration is to quiet the enteron by checking peristalsis, since it is the dangerous area. It contains, together with the diaphragm, numerous stomata vera, or lymph channels. The colonic region is a comparatively safe area as it contains only a limited number of such stomata, as does also the pelvic region. The colonic region and the distal end of the peritoneum are not areas of absorption, and hence are safe areas for the exercise of surgery. The enteronic region and the proximal end of the peritoneum are areas of absorption, and hence are dangerous ground for surgical invasion. Therefore, in all of these conditions, the aim of the surgeon is to limit, by physiologic rest, the spread of the disease in the enteron and the upper abdomen; and, we repeat, there is no means by which this can be so effectually accomplished as by the judicious use of opium.

We are not arguing for a return to the old, excessive, indiscriminate use (or rather abuse) of opium. The therapy which was wont to meet every pain with a shotgun of morphine, or a drachm of laudanum, belongs to a dark age in medicine, and has properly been relegated to the therapeutic scrap-heap. But a practice which utterly discards the drug is equally as irrational. The fact is, we are not particularly concerned in this preachment with opium itself, as a drug, but with the importance of physiologic rest—a therapeutic principle, especially pertaining to surgery, which stands somewhat in danger of being overlooked. And, despite all that has been and still continues to be advanced against the use of opium, we do not at present know of any drug in the materia medica which has anything like the same efficacy in producing physiologic rest that opium possesses. We realize, and admit with sorrow, all the tremendous crimes that are to be laid at opium's door; but we still believe that it has a wide range of usefulness and value, and we have tried to point out the direction in which this much-abused drug may be wisely and advantageously employed.

* * *

HOW FAR IS MEDICINE A SCIENCE?

THE question is often asked, "Is medicine a science or an art?" And various answers are given to the question, according to the angle from which the subject is viewed. Striking the mean between the two extreme views represented in these replies, it would seem that the true characterization of medicine is that it is partly a science and partly an art, and that those features of it which represent an art frequently take upon them the character of science. A pure science, of course, medicine is not, and never can become. But that is raising a question far too nice for discussion in the pages of a journal of practical medicine.

Indeed, the whole question is usually regarded as being of academic interest, rather than of practical moment. However, it is not, we think, so utterly devoid of

practical, every-day significance as might at first blush appear. For, just as creeds have a great psychological influence in determining conduct, so the conception of his work which possesses the physician's mind will, to a large degree, determine the manner in which he does it, and its ultimate value to the principles and practice of medicine at large.

If science be understood to mean accurate classified knowledge, then it must be confessed that many of our medicinal agents are not scientifically prepared, and much of our knowledge of disease is still chaotic. The processes of disease are so subtle and intricate and its language so obscure, that only by dint of long observation, close reasoning, and hard work can they be properly interpreted and the application of the needed remedy be made with anything approaching uniformity. The physician does not live who does not make frequent mistakes in diagnosis, and therefore in treatment. But we do not think it can therefore be truthfully affirmed that medicine is simply an art, and can not become a science. The argument that our knowledge of disease and of medicines is the result of empirjcism does not, in our opinion, demand such a conclusion.

That much of our knowledge—almost all of it, in practice—is empirical may be freely admitted. But it does not follow that because it is acquired in this way, our knowledge is not, and never becomes, scientific. The manner of acquiring knowledge does not, of itself, affect its scientific character. For that matter, all the knowledge that the world possesses was acquired by empiric experimentation, and a great deal of it by the purest accident. The principles of nature, which have prevailed from all eternity, have, to the extent of our knowledge of them, been empirically discovered, and many of them by mere accident. Yet no one ventures to question their scientific nature. So that any accurate knowledge which we may possess of disease and drugs may be equally scientific, in spite of the empirical manner of its acquirement.

It is not how we acquired knowledge that determines its scientific or non-scientific character, but what we have done, and are doing, with the knowledge after it has been acquired. There's the rub. It is this consideration which lends the question its practical significance, and gives every practicing physician a personal, working rôle in the solution which medicine presents to the query. If the doctor is content to accept each separate and isolated experience in his practice sheerly as an empirical experiment, and let it go at that, then his calling will continue to be merely an art, and a poor art into the bargain, and his experience will contribute nothing of value to the growing science of medicine. And it is to be feared that the habit which prevails among so many physicians (probably the majority of them) of using stereotyped treatment for diseases according to a phraseology and nomenclature arbitrarily arranged is responsible for the general estimation of medicine as an art and not a science.

The bearing of this remark is in the application of it, as old Commodore Busby used to say. The question for each physician to ask himself is not the academic question, Is medicine a science? but the intimate, personal question, Am I doing my part toward making medicine a science? Medical science is yet in its dawn, and a very early dawn at that. It behooves all physicians to study, closely and intelligently, the relation between symptomatology and drug therapy; to make careful records of his observations and experiences; to free himself from the fetish of nomenclature and phraseology and dig down for himself into pathology and pharmacology; and to do his part toward establishing the practice of medicine, even in its humblest relations, upon the foundation of scientific provings.

Drugs and Their Action.

By Bernard Sacks, M. D., New York City.

IT MUST not be understood that Dr. Sacks is arguing for therapeutic nihilism, or even skepticism. Rather, he is arguing against a fatuous therapeutic enthusiasm which attributes impossible virtues to drugs, and fills the market and the records with all sorts of chimeric "cures." In this respect, scientific medicine stands in danger of degenerating into quackery; and Dr. Sacks' article is a kind of nugatory check upon this sort of drug fetish.

In looking over a daily newspaper one may see on the same page an announcement of the launching of a new battleship and the report of a meeting of a peace committee. We read of nations sending delegates to The Hague Tribunal and at the same time placing an order for a few more dreadnaughts.

We meet with the same conditions in the medical press. Volumes are written on the value of prevention of disease. Tuberculosis congresses convene all over the world, and pages are filled with announcements of the discovery of new remedies and curealls. The number of drugs and preparations increases so fast that it seems that the powerful armament to fight disease is many times more formidable than the armament to fight war.

At present we have a committee of physicians and pharmacists engaged in the revision of the Pharmacopœia. I do not doubt that after the committee is through, the Pharmacopœia and the National Formulary will become enriched by several valuable additions, and a few more dozen remedies will receive recognition. The number of drugs that are recognized and not recognized is so great that it is a matter of some difficulty to remember their names, to say nothing of their therapeutic or even physical properties.

I do not propose to enter into a discussion of the value of various drugs such as are kept in the pharmacy to supply the daily demand, but I want to note here the fact that of the gorgeous array of bottles, jars and vials that are lined up on the shelves of the drug store, only comparatively few are actually used in every-day practice. I had some bottles on the shelves that I had no opportunity to use for a period of ten years of activity as a pharmacist. Some glass stoppers became so much grown in with the neck of the bottle that in order to remove them it became necessary to break the container in order to get at the contents. Of what earthly use are such drugs kept in stock for the sake of their name in the directory? Is it only to fill up the books with print, or to give working material for the student and teachers of medicine and pharmacy? Is it only to furnish to the drug store an attractive display to draw trade, or to serve as a collection of curiosities for a drug exhibition? The modern pharmacist has recognized the fact that the thing has outlived its time; he unceremoniously relegates the tincture bottles and the salt jars to the back of the store and utilizes the valuable space thus created for the instalment of a magnificent soda fountain or a dry goods counter.

It is the general opinion among the medical and pharmaceutical professions that the U. S. Pharmacopœia should be simplified. The foremost men in medicine are of the opinion that disease should be prevented or fought at its very beginning by means of hygienic measures and not by drugs.

It is much easier to prevent death from tuberculosis by early diagnosis and timely hygienic treatment than to fill up the lung cavities with drugs.

It is much easier to cure cancer by early diagnosis and timely surgical treatment than to cure it by means of "specific" juices.

Much has been accomplished lately by means of a specific serum. Diphtheria is cured by a specific antitoxin, and not by drugs. Rabies, tetanus, meningitis, etc., are successfully treated by means of specific antitoxins. But how many diseases can you cure by means of specific drugs? And how many specific drugs do we possess, official or non-official? Salicylates for rheumatism, quinine for malaria, mercury for syphilis. I don't know of many more.

How many diseases can we cure by means of drugs that are not specific? The fact is that the majority of acute diseases can not be influenced by drugs at all. They run their regular course; the patient gets well whether you treat him or not, and very often in spite of the treatment. Measles, scarlet fever, pneumonia can not be cured; they can only be treated; and then the conscientious physician does not treat the disease at all, he treats the patient. Have you any curative drugs for bubonic plague? How many cures have been accomplished by means of drugs in the cholera epidemics? In this respect a pound of carbolic acid does more good outside of the body than inside of it. And if carbolic acid were more freely used for external purposes there would be less demand for carbolic acid derivatives for internal administration, and we consume tons of it annually. A few simple remedies judiciously used are usually sufficient to tide a patient over some acute illness. If, however, we come across a formidable disease, very little can be done by means of drugs.

I want to cite here a few instances which more than anything else illustrate the futility of drugs in the treatment of serious diseases. In the capacity of pharmacist I had a chance to follow up these cases from the beginning to the end, since, while the patient may frequently change his doctor, he invariably sticks to the same druggist to whom he brings all his prescriptions, and who is the patient's general adviser.

Case I—Mrs. B., aged 45, housewife. Came to my store complaining of heartburn. I advised bicarbonate of soda, which gave her temporary relief. Then I gave Mist. rhei et sodæ, and after that she went to a physician who diagnosed the case as dyspepsia. A course of treatment followed consisting of various preparations of pepsin—official and non-official, ethical and non-ethical. It made her worse, and she went back to my R & S mixture. She consulted many other physicians, who prescribed for her more drugs with similar results. At last she went to a specialist who began to wash her stomach daily, forbade her to eat, and prescribed some more medicines. As her condition grew steadily worse, she went to one of the great dispensaries in our city where a thorough physical and clinical diagnosis was made, and the case was found to be one of cancer of the stomach. The tumor was so extensive—there being involvement of the liver at the same time—the condition of the woman was so bad that an operation could not be performed, and death occurred shortly afterwards.

Case II—Mrs. P., aged 24, married. had two children; wife of a poor peddler. She began to have trouble with digestion —constipation alternating with diarrhea; severe weakness, loss of appetite. She became a regular customer for home remedies at my drug store. My clerk sold her some beef, wine and iron. Finally she decided to see a doctor, who began to prescribe for her various remedies, such as elixir alkali, elixir peptenzyme, etc. These and other remedies not doing her any good, she went to a specialist, who prescribed ovoferrin. She began to cough slightly, so bought a bottle of wild cherry and tar; then she tried white pine expectorant. The doctors gave her various mixtures of ammonium carbonate, ammonium chlo-

ride and thiocol. I lost track of her. Recently I met her husband, who told me that some charitable society had sent his wife to a sanitarium for consumptives, where she died.

Case III—Mr. K., 29 years, machinist, married. He had been working over some kind of a patent, and the strain of overwork and worry made him very weak. He lost his appetite, became thin and pale and had pains in his stomach. At the beginning he tried home remedies, but since he made good wages he liked to be treated by doctors, and did not believe in self-treatment. He consulted several physicians, each making a different diagnosis and prescribing different remedies. Getting no relief, he consulted a professor of medicine who charged him ten dollars a visit, changing to another specialist who charged him five dollars a visit. After several (fourteen) visits to the latter, experiencing no relief from the stomach pumping, bismuth taking, fasting, etc., and having spent all his money, he visited the same clinic as patient No. 1. There, after being kept under observation for a short time, and careful examination having been made of his urine, the case was found to be one of diabetes mellitus; the stomach troubles being but secondary symptoms of the former disease.

I could cite more cases of the same nature, but even these few will illustrate the fact that empirical drug treatment is of small avail when a physician meets a formidable chronic disease. It also plainly shows that when a patient for some reason or other does not respond readily to treatment, the physician grows desperate, loses his confidence in the U. S. Pharmacopœia and at once resorts to all kinds of drugs in the futile attempt.

Would it not be infinitely better if the profession would bend its energies toward the propagation of the doctrine of preventive medicine, of hygiene and sanitation? Would it not be better if instead of devoting so much precious time to the study of drugs, their nature and uses, that time be devoted to the study of pathology and the art of early diagnosis.

* * *

REMOVAL OF FEMALE BEARD.

Schwentler-Trachsler states that the methods for the removal of hair from the female face have serious disadvantages. Destruction of the papillæ by electrolysis requires considerable technical skill, is extremely tedious, and in unpracticed hands causes pain and deformity. Kromayer's plan of removing the papilla with the surrounding skin, by means of a very small, sharp cutaneous punch, is entirely too severe for use on any but a few isolated coarse hairs, which can better be handled by electrolysis. Epilation by X-ray has been abandoned even by the radio-therapeutists; the dangers of atrophy and ulceration are entirely too great. All other methods of abnormal hair removal are merely temporary and but little better than shaving. The author had noticed that hair growth, both lanugo and coarse, was markedly hindered by the vigorous employment of pumice stone when used in the treatment of acne and other conditions. Applying this to the treatment of hypertrichosis, she began several years ago to treat every case that presented itself with vigorous pumice stone frictions twice daily, after the coarser and more isolated hairs had been removed by electrolysis. She had treated 252 cases successfully by this combined method; all varieties of hirsuties were included, but the method is especially applicable to cases where an abundant lanugo growth partially or entirely precludes the use of other methods. The only contraindication that she has observed is the presence of an inflammatory reaction, in which case treatment must be stopped until that his disappeared. Schwentler-Trachsler has waited for years before publishing these results, in order to be satisfied of the permanency of the results attained.

Hemorrhoids.

By Ira W. Robertson; M. D., Dustin, Okla.

OF ALL the surgical operations that the general practitioner is called upon to do, the removal or palliation of hemorrhoids is perhaps the most common. Yet every practitioner knows from experience that this seemingly simple procedure offers some exceedingly vexatious problems. The author writes from the standpoint of a general practitioner who has worked out these problems to a satisfactory solution, and is anxious to give others the benefit of his happy issue, which our readers will, we are sure, gratefully accept.

In Moses' time the people were instructed by the priests to prepare golden images of their emerods, or hemorrhoids, place them in the Ark of the Lord, and return the same as trespass offerings to the Israelites from whom they had taken it; this they did and were accordingly healed; but as we have neither Moses nor the prophets, and medicinal treatment is a failure, we are compelled to resort to some operative method for the relief of this condition.

My object in writing this paper is to try to show some of the objectionable features of some of the more common operative methods that are practiced today. In the beginning I shall say that no operation in surgery has been performed as many times with the amount of success as that for the relief of hemorrhoids; and when we take into consideration the qualifications of the many operators, the many and various methods practiced, even by the inexperienced, we are astonished at the results obtained. And this record is more remarkable when we consider the various methods that are applied, indiscriminately, regardless of the pathological condition; yet the results are so brilliant that there is but little room for criticism of any particular method or operator. However, there are two great principles which we should keep in mind: First, complete and permanent control of hemorrhage; second, the preserving of the function of the parts. If these two principles are kept in view, our results will be a success, regardless of the operative method; but a glance at the literature in this field will bring to view so many methods, both old and new, that it seems impossible to adhere closely to these principles. The clamp and cautery fall short, with but one exception, or, rather, they apply to but one particular pathological condition, viz.: in old, long-standing cases where the pile-tumor is old and hypertrophied, where there is a thickening of the mucous membrane as well as of the wall of the tumor, and, in addition, a partial prolapse of the rectum, which is the condition in all old, long-standing cases, where the tumor comes down and out during defecation.

In this particular class the clamp and cautery is the ideal method, for here you not only do your work with a reasonable amount of safety so far as hemorrhage is concerned, but the contraction as the result of the burn will help to take up the slack in this neighborhood and in this way relieve the partial prolapse; but the young tender pile, that bleeds so easily during defecation, and is yet too young to be caught in the grasp of sphincter, is the one that gives us so often the dreaded post-operative hemorrhage.

The Pennington operation, to which I have been rather partial, is a good one, especially in the originator's hands; but it does not always assure us a perma-

nent control of hemorrhage; it leaves a large raw surface.

The old-fashioned ligature, with the sloughing stump, and the injection method, are mentioned only to be condemned.

The Whitehead operation is one I've never seen; in fact, I have heard it condemned by good surgeons, and even by teachers, until I have not given it my attention.

After a scant review of, and some objections to, the above-mentioned methods, I want to say that the Pilcher method of operation has appealed to me over all others: first, for its ease and simplicity; second, for the assurance of permanently controlling the hemorrhage; third, for the preserving of the functions of the parts; and last, but very important, it gives the patient less post-operative pain and more comfort immediately afterwards than any method I know of.

Before going into the description of this method, let me say that asepsis, or even antisepsis, do not fulfill our expectations in rectal surgery. In other words, they are not of the same value in this field as they are elsewhere, from the fact that our patients rarely die, and I doubt if death ever occurs from infection alone. It seems that if any part of the human body is immune to infection, it is the rectum, and if there is any part of the anatomy that can resist more abuse, traumatism and rough handling, and yet retain its full function than the rectum, I would like to know where it is. Our only dread is one of the other above-named emergencies, viz.: hemorrhage or loss of function. And as a safeguard to these, I have adopted the Pilcher method.

The patient is prepared in the usual way. When the sphincter has been dilated and the hemorrhoid drawn down to the anal margin, the tumor is picked up by the most dependent part with the hemostat or thumb forceps. The tumor is now grasped with a narrow curved forcep parallel with the long axis of the rectum and tightly clamped. If there is not more than one or two tumors, the clamp forceps may be applied about the base of the pile, but if there are four or five tumors to deal with, we should not grasp more than about two-thirds of the tumors. After the pile has been clamped, a full curved Hegedorn needle, armed with a No. 1 ten-day catgut, is carried about one-eighth of an inch beyond the point of the clamp forcep through the mucous membrane, and around the vessel that supplies the hemorrhoid, and cut a quarter of an inch from where it entered and tied. (The needle thread is not cut.) This suture secures the blood supply of the hemorrhoid and prevents subsequent hemorrhage. The pile-tumor is now cut away with curved scissors within an eighth of an inch of the clamp. A continued suture passes underneath the clamp and over it until the cut surface is all included. The forcep is then unlocked and withdrawn. A pair of blunt thumb forceps may be used here to invert or push in the edges of the cut surface as you tighten up the suture. In this way you obliterate nearly, if not all, the raw surface, which lessens the pain and prevents the parts from sticking.

In the clamp and cautery, as well as the Pennington method, the tampon dressing is recommended, which gives the patient more or less pain and discomfort and will have to be removed in about forty-eight hours, too soon for the parts to have healed. On removing the tampon I have seen secondary hemorrhage occur in both methods of operations, after apparently a perfect technique in the hands of good surgeons.

Dr. Pilcher, of Brooklyn, says that after twelve years of experience he has not had either hemorrhage or severe wound infections following this method; the ease and simplicity of this method

and its completeness as a surgical procedure commends it to my judgment.

The after-treatment consists of an occasional suppository containing morphine, ¼ grain; extract hyoscyami, 1 grain; and iodoform, 3 grains, inserted in the rectum. A piece of gauze with a little carbolated vaseline or dusting powder is placed against the anus, cotton over this, and retained in place with a "T" bandage. The external parts are washed daily and new dressings applied; the bowels are usually moved by the second day.

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SHOULD FOOD BE HOT OR COLD?

When a boy, says a writer in the *Healthy Home,* I went out into the woods with my father one cold Saturday to chop cordwood. The day was cold, but the sun was bright. The forests kept off the wind, and there was no trouble in keeping warm.

When we came to eat dinner, however, which we had brought in tin pails, the pie was frozen solid, and the bread and butter was so cold that it had actually stiffened. It would have taken a whole lot of animal heat to thaw out that frozen food, although as a healthy boy of sixteen who had been chopping wood all the morning, I could probably do it if anybody; but father was wiser than that. A big tree furnished plenty of dry wood, and soon a splendid fire roared, before which our pails were hung, and near which we sat later for a comfortable meal.

There is no doubt but that a cold breakfast on a winter morning, or a cold dinner on an icy day, is bad for weak digestions.

On the other hand, to eat a hot dinner on a very hot summer day is equally bad for the stomach and the nervous system. It simply gives the body so much surplus heat to dispose of when the outside temperature makes it hard to dispose of what you have. Food is best taken as a rule at a temperature not far below the actual temperature of the body. This is always the case in tropical climates, where man can exist in comfort in a state of nature as regards clothes.

When one has hot drinks, even though the climate be cold, he is likely to do himself harm if he goes to excess. The child's protest against food or drink that is too hot, is well founded. The child usually likes warm milk, but protests if it is hot.

It may be worth noting, however, that hot milk is a more wholesome and easily digested food than boiled milk. Boiled milk is constipating. Hot milk is milk raised to a temperature of 125 or 150 degrees, and if taken at once as hot as it can be comfortably swallowed, it is one of the most powerful and harmless stimulants known. Boiled milk, or milk raised to a temperature of 212 or more degrees, seems to undergo a change in its character which makes it less effective as food.

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A NASAL WASH.

J. Dundas Grant, in *Practitioner,* remarks that in many persons who are in the habit of washing out their noses with plain water, swelling of the mucous membrane results; from this they obtain relief when their supposedly hygienic habit is stopped. A hypertonic solution, such as .0.50% Glauber's salt solution, on the other hand, would tend to deplete the mucosa. But it is generally better to use an isotonic solution, except when there is geat dryness and ozena, when a hypotonic solution should be used, viz., plain water with a mere trace of salt.

For cleansing the nose in simple chronic rhinitis, Grant recommends the following:

Sodium biborate	96 grains.
Sodium salicylate	of each 48 grains.
Sodium chloride	
Pure glycerin	72 minims.
Menthol water (made like camphor water) to make	6 ounces.

For use, a teaspoonful of this mixture is placed in about an ounce of warm water.

Surgical Gynecology.*

By J. J. Link, M. D., St. Louis, Mo.

Surgery in gynecology has been one of the most abused methods of treatment in that field than any other branch of the healing art. It is a well-known fact that the female sex is more submissive to surgery than the male sex. It is also well known that the female generative organs, especially the ovaries and tubes, are blamed for many aches and pains for which they are not guilty; consequently these organs have been frequently sacrificed without cause. Many years ago Lawson Tate read a paper before a surgical society in which he advocated the removal of the fallopian tubes and ovaries in case of chronic pathological changes, such as salpingitis, hydrosalpinx and pyosalpinx, ovarian cysts and ovarian abscess. In the next meeting of the same society, which convened a year later, to his astonishment, he found many soup bowls filled with healthy ovaries. And for a number of years after the advocation by Lawson Tate of the removal of the offending female organs, healthy ovaries, tubes and uteri were removed by the thousands for all kinds of ailments and non-ailments. many a hysteric woman was subjected to ovariotomy; many a female insane patient was submitted to ovariotomy; and, in fact, in some sections of this country there was for a time a craze among women to have their ovaries removed as a means to prevent conception.

On the other hand, there is no field in surgery where so much benefit has been reaped by careful and conservative surgical interference as there has been in the surgical cures of the diseases of the female organs. Many women who were allowed to die with cancers of the uterus are now allowed a new lease of life, and in many instances apparently permanent cures are brought about by the removal of the uterus *in toto*. Many a woman who would be compelled to go on with torn cervix and lacerated perineum and the consequent complication of vesicocele and rectocele, prolapsus of the uterus causing rectal complications, backaches, headaches, neurasthenia, digestion disturbances, etc., is now restored to health by means of surgical repair and restoration of the parts. Women who formerly went on with displaced womb adherent to the rectum, causing constant back pains and other reflex troubles, are now relieved by simple operations which restored the uterus to the proper position. Cases that went on through life suffering untold agony from the large growths on the uterus and ovaries, are now early diagnosed and the growths removed.

Cases of pyosalpinx and pathological changes of the tubes and ovaries and adhesions consequent upon inflammatory conditions of the pelvic regions are now relieved and the patient's life saved by these procedures.

In connection with this paper I wish to call attention to a condition of the uterus which frequently occurs in women at about or subsequent to the menopause, and which is specially dangerous at about the menopause for the reason that the physicians blame it to the "change of life," allowing the patient to drag on until operative interference is of no avail. The condition to which I refer is hemorrhage from the uterus, which comes on irregularly or it may be simply a profused menstrual flow, coming on at the menstrual period, but does not cease at the regular time.

These symptoms are usually due to a degenerating intermural fibroid or a malignant growth. When malignant it usually comes on irrespective of the men-

*Read before the Eclectic Medical Society of Missouri at Kansas City.

strual period; coming on in a mild flow, stopping for an indefinite short period and coming on again with a more profuse flow. The patient begins to show anemia, and if some of the cancerous products are absorbed, cachexia. In either case, the entire uterus should be removed. However, in some individuals, where one is positive that the condition is due not to a malignant growth, but only to the degenerated fibroid, the removal of the fundus of the uterus is sufficient and the ovaries allowed to remain unless they are proven to be diseased. But in no case in which there is any doubt as to whether the condition is a malignant one or not the whole organ must be removed, and the vaginal route is preferable. I am, and always have been advocating a conservative procedure in ovarian surgery. I have many times taken off a growth from the ovary, leaving a fraction of the ovary, and I believe I have thereby benefited the patient; for when both ovaries are removed a stormy menopause is to follow, causing many uncomfortable months for the patient.

SIMPLE APPENDECTOMY.

Weller Van Hook, in the *Medical Council,* thinks that every surgeon of some experience, and even those who are comparatively new in the work, can carry out the followng suggestions for removing the appendix, at first in uncomplicated cases, and later in complicated ones:

1. Make an oblique incision three-fourths of an inch long over the appendix; carry the incision through the aponeurosis of the external oblique muscle, which is recognized by the fact that it can be felt with the left forefinger as well as by the knife point with which it is scratched.

2. Separate with the left forefinger and an artery forceps, held in the right hand, the fibers of the external oblique, internal oblique and transversalis muscles, keeping in mind the direction in which their fibers run. Do not cut these fine fibers, but merely separate them.

3. Push a hole through the peritoneum with the left forefinger or, if the connective tissue and peritoneum are too tough, lift them with an artery forceps and cut a hole in the peritoneum with scissors.

4. Find the appendix with the fingertip by touch. It feels somewhat like a fishing worm. Lift it with an artery forceps passed down by the side of the finger. If you do not close the artery forceps too tightly you will not crush the organ.

5. Having drawn out appendix, crush and ligate the mesenteriolum.

6. Cut off the appendix between two pairs of artery forceps, and whip over the cut stump of the appendix with silk or catgut suture.

7. Having removed the forceps from the stump, turn in, with intestinal sutures, the peritoneum about the wound in the cecum.

8. With the left forefinger in the wound, feel for the slippery peritoneum, draw up its edge by friction with the finger, grasp it with artery forceps, and lift it up into the wound far enough to stitch together with a catgut suture.

9. Lift the muscles of the abdominal wall in the same way, and insert catgut stitches in two layers.

10. Close the outer wound with two silkworm stitches.

11. Patient to sit up next day after operation, if there is no wound complication, and leave hospital in six to ten days.

ACUTE URETHRITIS.

Sodii bicarbonatis Sodii bromidi	aa	3ss
Tr. belladonnæ		3j
Aquæ menthæ pip. Syr. acacia	aa	℥iij

M. Sig.: Tablespoonful every three hours, to be used as a sedative during first days of gonorrhea.

The Human Tongue.

By E. R. Waterhouse, M. D., St. Louis.

TO THE modern Eclectic belongs the credit of having developed the many reliable diagnostic conditions of the tongue, which in many instances are the only guide in selecting the proper therapeutic agent, and the only points in giving us a definite knowledge of the finer or more intricate pathological conditions. We must arrive at a knowledge of the pathological tongue by comparison with the physiological organ, and this can be done only by having the image of the normal tongue constantly in our mind; so it will be seen that a close study of this normal tongue is of the same importance to the practitioner as the study of the organ in disease conditions.

The color, shape, coating, and manner of protruding the tongue all carry the most valuable diagnostic information to those who are learned in its silent language. To the average physician of the dominant school the inspection of the tongue is a sort of habit, or to "buncombize" his patient to a certain extent, by trying to appear learned to an extent greater than he really is. He says: "The tongue is white; he has had a fever." Now what do we care what he has had?—we want to know what he has now, and we want these pathological conditions that are shadowed out as symptoms to point us directly to the right medicinal agents that will rectify these bodily wrongs. As an old physician told me: "I can't tell anything about the looks of the tongue any more than I could by looking at a slice of calf-liver." And he was honest in his assertion, and spoke the sentiments of the great majority of physicians who are practicing medicine today.

The study of the tongue enables us to treat diseases of the digestive tract with a degree of certainty that is astonishing to the average practitioner. The same can be said of rheumatic troubles; and in fact the whole line of pathological conditions are so closely interwoven that certainties in therapeutics make it an absolute necessity.

The shape of the tongue tells us of the condition of the sympathetic nervous supply. With the narrow tongue we note the irritation or over-stimulation of this important function. The nerves seem to pull upon the muscular fibres of the tongue and narrows it, and with the opposite condition, that is, a condition of broadness, the nerves have let go of these fibres and the tongue spreads out like a duck's foot in the mud, and indicates a prostration of these nerves, and the greater the degree of this broadness and "pin-cushion" puffiness, the greater the degree of prostration will be noted. So in the narrow tongues we find use for nerve sedatives, such as passiflora, pulsatilla, gelsemium, bromides, aconite, etc., while remedies that are stimulating in their effect are always contraindicated, and with the broad tongue the opposite are called for, such as quinine, capsicum, nux vomica, strychnia, and general restoratives, and remedies that cause nerve prostration or are depressing in their effects are contraindicated, so it will be seen that much thought must be given to these matters, and those who have no capacity for sound thinking must content themselves with the old methods of guessing at conditions.

When we add to this narrow tongue a red tip, we have, plus the irritation of these nerves, an irritation of the stom-

ach, which may be from the extent of a slight uneasiness of this organ to severe nausea and vomiting, which can be determined by the degree of redness shown; and here we find use for small doses of ipecac, pulsatilla, gelsemium, bismuth, amygdalin, etc., with demulcent drinks as slippery-elm or flaxseed water, and in this condition such remedies as podophyllin, calomel or nux, or in fact any agent that is stimulating should be avoided, unless in some instances where we find this tongue coated at its base with a coating in color slightly a yellowing, when we have in addition to the other conditions a torpor and loaded condition of the liver. But these conditions will seldom be found together, but should they be, then it may be necessary to even cause more irritation of the stomach by remedies to get the liver in working order, then turn your attention entirely to the stomach. In making this plain to my class I draw a horizontal line upon the blackboard, which is to represent the normal man, or any part we may designate, and measure the deviation from this normal as excess (above this line), or defect (as being below this line), and with this excess we always want sedatives, and with the defect always prescribe those agents that are stimulating or tonic in their action, and thus this method of comparison will always keep the physician upon the right track, or mistakes will be less liable to take place.

Now, this broad tongue with red edges tells us of the irritation of the bowels; the extent of this irritation is in proportion to the degree that these red edges extend inward toward the center line of the tongue, as, for example, in coming typhoid or continued fevers the red edges increase until nearly the whole tongue is invaded, when, if the trouble (blood deprivation) is not stayed they change to a dusky red and then to a brown or black, when we note severe typhoid conditions and we look out for hemorrhages of the bowels. Here we want a liquid diet, such as boiled milk, ice cream, baked bananas, with aconite, and especially echifolta in good, round doses frequently repeated, and never any quinine, as that will cause more trouble with the nervous system as will any of the opiates.

With the broad tongue without any coating, but a white fur, we note a complete loss of digestive power or an aggravated atonic condition, and "boosters" are in demand to call more blood into the lining of the stomach, such as nux, quinine, with or without capsicum, bitter tonics, alcoholic stimulants, strychnia. We hardly need cathartics, because this white fur does not indicate any accumulations in the digestive tract. This white tongue tells us of still another condition, that is of a hyperacidity of the fluids of the body, and which demand alkalies. and in rheumatic cases it guides us in the administration of the salicylates between the salicylic acid and the soda salicylate; or it may show us a case of rheumatism that plain bicarbonate soda will cure, or if the tongue is very red we may cure with lemon juice or hard cider alone.

Should we have an abnormal red tongue we note a desire for acids; the patient wants lemonade, or anything that is sour, and it will be noted that after a fever has run for a time that these natural acids seem to have been burned out, and when these acids are indicated and supplied that the fever will decline and every part function better because the demand has been supplied. Still we have an exception to this red tongue that I designate as calling for acids—in the one that is made red by great irritation of the bowels, which can generally be differentiated by the tenderness and other evidences of this irritation. I well remember such a case that was treated by one of our Eclectics years ago, in which the poor fellow was given muriatic acid until he died, under the im-

pression that this red tongue called for acids, when it was from irritation and should have had echifolta, pulsatilla, ipecac, liquor-bismuth and demulcent drinks.

Should this acid tongue be light in color, vegetable acids are demanded: lemonade, hard cider, or acid fruits, oranges, etc.; or a deep, dusky red, we use mineral acids, such as muriatic (antiseptics being in greater demand the darker red the tongue). Where we have a red tongue that shows an inclination to a purple we find that nitric acid will do most good. We have another red tongue which may be either broad or moderately narrow, where the red is dark and partially obscured by a filmy-like covering, as if brushed over with the white of an egg, with the red showing in slight streaks through this film; and here we find the breath like the odor of decomposed animal matter, and the demand is noted for antiseptics in combination with mineral acids, and we use sulphurous acid (remember, *ous*) or aromatic sulphuric acid, and improvement is noted at once, yet I believe echifolta should be given in alternation with this acid.

We have another tongue that denotes trouble in the small intestines. This is a tongue not often seen. I have seen but one of these tongues in a year, and tried to get this man to go to the college with me to show the class, but could not induce him to go—on the promise of a two-dollar bill. This tongue is the only diagnostic point known to me that points directly to this lesion of the small intestines. It is rather broad and nearly a normal color, slightly coated, but the tip for the three-fourths of an inch back is studded with minute blisters, so small that it requires a good eye to determine that they are really blisters. Here we note a great degree of nervousness, with cold, clammy condition of the feet and lower legs, so much so that the patient may have a cold all winter from the damp feet. Deep pressure about the umbilicus finds tenderness. Here all pills are contraindicated (for the constipation use wineglass doses of olive oil or ordinary doses of castor oil) with flaxseed tea and elm water. No sugar to ferment and increase the nervousness; no beer or alcohol, no ice water, easily digested foods and such remedies as pulsatilla, colorless hydrastis (never the dark extract in these cases), ipecac, hyoscyamine, and lots of patience; the sponge bath all over the body every night with hot epsom-salts water, one ounce to the pint, to make the skin do its work and also to quiet the nerves and induce sleep.

We are all familiar with the strawberry tongue characteristic of a scarlet fever, so we will say little about that.

Another tongue is the one that is spotted, patches of the epithelium being from the size of a kernel of corn to as large as a nickel. Here we note a poor nutrition. In such cases always look for worms, and in the large majority of cases you will find them. In these cases tonics do not seem to do good until the cause is first removed.

Another tongue is the fissured tongue; it is mentioned as the mapped tongue. The patient complains that whenever he eats cheese or tomatoes the tongue smarts and burns. Many writers tell us that with these tongues we always have a condition of renal inflammation or congestion, and point to a coming morbus-brightii. I have observed this tongue for twenty years, and am of the opinion that this fissured condition results from a peculiar condition of the nervous system that may be caused by renal congestions as well as by syphilis, and in those who have injured their nervous systems with the inordinate use of strong plug tobacco, or it may be the copperas that is contained in the tobacco. This particular point should have more study until it can be found exactly what its cause may be.

We are all familiar with the tongue that is coated with a thick covering that is like grease or cheese, and can be scraped off; and where the most of us would give a good, generous dose of sal epsom, or in many instances an old-time emetic of lobelia would do good, but at this day people rebel at the suggestion of a "puker" and we are obliged to turn to some other cleanser or lose our job. As before stated, should this tongue show a yellowish coating running forward from its base we have a torpor of the liver, stomach and entire upper intestinal tract, and we give podophyllin, calomel, irisin, or probably what stands at the head is my combination that I call irisin compound, which is composed of a tenth of a grain each of irisin, podophyllin (brown), leptandrin and extract nux vomica. This latter combination is a specific for all those cases of acid or fermentative dyspepsia, constipation and sick headache, as in all of these conditions you will notice the indications on the tongue calling for this remedy.

With this tongue you will find that all febrile conditions are intensified, or possibly depend wholly upon this condition, and when it is removed the balance of the treatment is easy.

When we have a dry tongue, no matter in what disease it may appear, we note irritation of the nerve centers, and when it moistens it tells us more than it does to the laity; it tells us that we have restored the condition of these centers and that nature is beginning to assert herself. With this dry tongue add half a drachm of good phytolacca to your four ounces of other medicine and note how soon this tongue will moisten.

Another tongue that we will find in chronic diseases is a full, expressionless organ, possibly a litle puffy, with a single fissure running from near its point back, and dividing the tongue into two lobes. The characteristic color of this tongue is of a leaden hue, and denotes poor nutrition and blood-making. We also note a poor condition of all excretory organs. Here we must first use alteratives to break down and carry out before we can have a place for nutrition. We may call this the phytolacca tongue, because this remedy will do more good than any other single drug, but after these alteratives we must use restoratives. We see this after rheumatism, diphtheria. Clean him up, inside and out; rub him with the epsom salt solution to get his skin in condition and sal epsom to remove the stink that he has, and soon all goes well.

When a man is hungry and his stomach is empty the tongue is much lighter in color than at the end of a meal. Why? Because when this stomach is empty the blood vessels are contracted and depleted and very little blood is sent to the walls of the stomach, but when the food is introduced the blood is called in and the stomach gets red, the gastric follicles begin to throw out the digestive juices and the tongue, being the index of the stomach, turns red also.

Another tongue is a full, broad tongue, with considerable coating, the edges showing indentations from contact with the teeth, and we note that the patient's breath does not smell as pleasant as the rose. This is the tongue that shows a fermented state of the stomach and bowels. With the retention of this filth, which is of an acid reaction, and demands an antiseptic in combination with an alkali, as sulphite of soda, and a generous dose of sal epsom, and must be done before we can get any action from other remedies or foods, and in many instances where this is allowed to remain it brings about typhoid complications that would probably have not appeared had this been attended to rightly. This is important in the starting-out treatment of a case of inflammatory rheumatism, and is a call for jalap and senna many times.

In the great majority of ladies who are not very strong, or I may say all of them, we note at the time of menstruation that they have a puffy tongue, indicating a torpor or prostration of these sympathetics. The tremulous tongue is another example of debility. As the patient protrudes the organ he can not hold it still. That may be all the pathological point that you will be able to note, and this is a call for restoratives, and with either of these conditions returning at the period of menstruation we should think of viburnum, pulsatilla, mitchella, senecio, or the cohoshes.

Now I ask my physician friends to read this carefully and re-read it; try it at the bedside, get these indications straightened out in your mind so you can use them at will, and you will be astonished at the help it will be to you in your every-day practice, as the many perplexing diagnostic conglomerations that it will make plain to you, and how many times it will lead you out of the field of uncertain therapeutics into a line of certain results. ✥ ✥ ✥

ARTHROPATHY.

According to Barré there are two principal clinical forms of arthropathy:

1. The arthropathy of the tabetic.
2. The arthropathy of a tabetic type but without tabes supervening in syphilitics.

Now what is definite in an arthropathy heretofore called tabetic? The following is M. Barré's answer to this question:

Two patients who have arthropathy, one of whom is a tabetic and the other presenting no symptoms of this affection, have one thing in common: both are syphilitic. But syphilis has, as one knows, a very marked tendency to produce vascular alterations and diminish the caliber of the middle-sized and smaller vessels. M. Barré asks if the lesions from syphilitic arteritis would not be the basis of articular trophic trouble, as he has been able to prove that, in a certain number of joints, the articular vessels and the nourishing vessels of the bone were affected with syphilitic lesions. Accordingly, the anthropathies called tabetic are not of nervous origin; they are secondary to the syphilitic lesions of the nourishing vessels of the articular extremities.

It is this vascular theory, based on numerous anatomo-clinical facts, that M. Barré opposes the old theory which had it that the nervous system alone was the activating cause of the alteration in the nutrition of the bone. An objection to be made to this conception is that in certain affections, such as syringomyelia, an affection that is non-syphilitic, there can exist anthropathies similar to those of tabes. M. Barré's rejoinder is as follows: Contrary to what has been taught us, syphilis frequently exists in patients who have syringomyelia, and it is because some of these patients are syphilitic that there are present articular disturbances similar to those of syphilitics and tabetics.

An attempt has been made in this letter to outline the conception of M. Barré as to the arthropathies which we encounter in the course of tabes. As can readily be seen, his theory is not devoid of interest. His arguments are numerous, logically deducted, and well co-ordinated. Undoubtedly, the absence of a wide experience, on the part of the author, detracts at present from the full value of the theory, but the support of M. Babinski augurs well for its future. Moreover, the theoretical ideas which are advanced and strengthened by a therapy which has proved efficacious. If an arthropathy of the tabetic type is a nutritive trouble of the osseous epiphyses, directly connected with syphilis, one should, according to M. Barré, have recourse at once to mercurial treatment, and in particular to intravenous injections. Certain patients in this condition have already been submitted to this therapy and their arthropathies were greatly benefited.

Advances in Proctology.

AMERICAN PROCTOLOGIC SOCIETY.

Thirteenth Annual Meeting, held at Los Angeles, Cal., June, 1912.

THE American Proctologic Society is not a very large organization, nor does it make much noise or fuss. But, in a quiet way, its members do excellent work in a line of medicine and surgery that is all too little explored or exploited; and once every year it meets in convention and presents the results of its observations and experiences. These results are always of great value to the general practitioner, who is in most instances obliged to be his own specialist in rectal diseases and related troubles. The reports presented at this society are invariably of the most practical character, touching the clinical side of the subject, and we believe that our readers will derive real and valuable help in their everyday practice from a re-presentation of these papers.

PRESIDENT'S ADDRESS.

Relationship and Duties of "The Proctologist" to the Profession.

By JOHN L. JELKS, M. D., of Memphis, Tenn.

He stated that this society was an innovation when organized—a strange vessel on the high seas. A child of American medicine, it has now become a sprightly youth, with ambition and strength of purpose, having and exercising authority.

The medical world recognizes as authoritative the expressions of its Fellows in the field covered.

He admonished discretion, thorough description and perfection of technic. Hasty speech or carelessly written papers can not be erased or changed—as in their publication they become a permanent record.

He referred to the theories of our science, which were born of dreamers and nurtured by enthusiasts, and fancies no solid superstructure could be reared on foundations so infirm, and added that neither these, nor the honor, distinction nor the gain they held out should be sufficient to determine the surgeon to make merchandise of theories.

He called attention to the obstacles this society had encountered, because of these fragile theories, which had previous to its existence been set up as targets for those who were unfavorable to the development and progress of this specialty.

He considered the true surgeon and specialist as humanitarian, whose purpose in life is to save life, restore health and happiness, and admonished him to shield and protect his brother from the darts aimed to destroy.

He also referred to cancer in the rectum, sigmoid or colon which may have been treated as of minor significance until metastases are so extensive as to preclude hope of a cure. He praised those proctologists who have with much patience and fortitude labored for and finally overthrown that unfortunate assignment of malignant rectal and colonic cases to untimely graves.

He stated that much harm has been done by the profession in the establishment of drug habits among the American people for the relief of constipation, as last year's symposium before this society would show, and says the proctologist is best equipped to study these cases, and arrive at the true etiology pointing to means of relief.

The American people are living in tin cans and cracker boxes, sparing time only to catch the next train, or meet the next market report, are storming their nervous systems with destructive toxins,

filling sanatoria and health resorts with wrecks and lowering the scale of human usefulness and intelligence. None can more early observe the impending catastrophe or turn on the searchlight as the procto-enterologist and scientist, who calls together the aids of chemistry, physiology, pathology and bacteriology and a fair degree of understanding as to the results of the methods and habits of life of the average American citizen, who is less careful in the selection of and preparation of his own food than that of his stock.

He complimented the fellowship of the society, which is limited to fifty and has forty-three members, and stated no similar number of men are banded together in the civilized world who can boast of greater attainments for the science of medicine, or for humanity, almost every member being the author, or an associate author of a book, and these are all standard text or reference books in this branch. Most of them also have been inventors of valuable instruments, or appliances applicable to this specialty.

He referred to some of the research work done by the Fellows, and to the possibilities yet before them in procto-enterology.

He alluded to the intra- and extra-rectal and anal and colonic infections, the rôle they play and the possible developments of vaccine therapy and antitoxins in combating them. He stated that each Fellow should carefully weigh his selected subject for these meetings, being mindful of the fact that the general profession is looking to this society and its individual Fellows for facts, not fancies; for proven remedies and technics, and not fads.

The society has attained an individuality, both national and international, and he reminded his Fellows that there is labor yet to perform. That they must retain their progressive spirit and enthusiasm, lest they lapse into a state of self-satisfaction when retrogression will mean their ending.

He referred to the fact that few of the hospitals of this country permit additions to their staff of specialists in proctologic work, hence the general surgeon and the general practitioner are doing the work in these institutions, about as these same men would do the ophthalmologic work, etc.

He recommended the addition to the American Medical Association of a section in which the subjects gastro-enterology and proctology, or procto-enterology, may be discussed.

He advised closer confinement of the proctologists to this work, to the exclusion of general work, and believed this will receive from the profession greater respect for this specialty, and that fewer of this class of cases will be referred to the general surgeon, or be accepted by him for treatment.

Conservative life insurance companies are now convinced of the necessity of paying attention to the rectum and colon and such instances as the writer's confidential reports to alert examiners of cases of amebic infection, adenomata, papillomata, syphilitic and tuberculous diseases, which the examiner would have overlooked, and impressed him wtth this fact, and he wondered if these and similar instances had not brought to the minds of medical referees the possible advisability of subjecting all applicants for large policies to a plurality of examiners. He advised the change of name of this society to that of The American Procto-Enterologic Society, and stated not one of the Fellows of the society had found he could eliminate from his work intra-abdominal intestinal work.

A Review of Proctologic Literature for 1911.

By Samuel T. Earle, M. D., of Baltimore, Md.
Chairman of the Committee on same.

Dr. Joseph F. Saphir, of New York City, the *New York Medical Journal.* 1911, Vol. 93, page 216, gives a description of "A Syringe for Local Anesthesia in Rectal Operations."

Dr. von Erich Schlesinger, Berlin, *Deutsche Medizinische Wochenschrift,* February 9, 1911, reports "An Air Pessary for Keeping in Place Internal Hemorrhoids and Prolapse of the Rectum."

Dr. Thomas B. Noble, Indianapolis, Ind., *American Journal of Obstetrics,* 1910, Vol. 61, page 259, has devised an instrument known as the "Anastomat" to facilitate the end-to-end anastomosis in extirpation of the rectum and sigmoid.

Dr. Dudley Roberts, Brooklyn, N. Y., *The Proctologist,* 1910, Vol. 4, gives a description of "A New Anal Speculum."

Dr. James F. Churchill, Chicago, Ill., *Surgery, Gynecology and Obstetrics,* Vol. 11, 1911, page 205, gives an interesting paper on "Rectal Anesthesia."

Leslie W. Dryland, M. R. C. S. England, L. R. C. P. London, D. P. H., *London Lancet,* 1910, Vol. 2, page 801. "An Operation for Prolapse of the Rectum."

Sidney Boyd replies to the above paper of Leslie Dryland's, *London Lancet,* 1910, Vol. 2, page 1242.

Dr. L. L. McArthur, Chicago, Ill., *Journal of American Medical Association,* 1911, Vol. 57, page 363, "Rectal Prolapse."

Dr. Kenneth A. J. MacKenzie, Portland, Oregon. Transactions of the American Surgical Association, 1911, *Surgery, Gynecology and Obstetrics,* 1911, Vol. 13, page 218, "Treatment of Fistula in Ano without Mutilation of the Sphincters."

A. Campbell Magarey, M. B. Adelaide, M. R. C. S. England, *British Medical Journal,* 1911, Vol. 2, page 71, "Hypertrophied Papillæ of Morgagni."

Post-Operative Care of Rectal Cases.

By Wm. M. Beach, M. D., of Pittsburgh, Pa.

Success in the solution of proctologic problems is measured by the degree of perfection in the restoration of functional conditions involved; we must remove the disease, but it is quite as important that we have a care to vouchsafe to our patients perfect function.

Post-operative developments that need our attention are: (1) The disturbance of the nervous system; (2) the disturbance of the vascular system; (3) digestive derangement; (4) local conditions.

Post-operative neuroses manifest by (a) shock, (b) nervousness, (c) pain, (d) sphincteralgia, (e) retention of urine.

Vascular aberrations are shown by (a) hemorrhage, (b) infection.

Gastro-intestinal derangements are (a) nausea, (b) constipation, (c) ampullar impaction.

The local care of wounds should be inspected daily by the operator.

If patients are given proper post-operative care, their dread of radical cures would quickly subside, and rectal surgeons would escape untoward sequelæ they may be compelled to record.

Patulous Anus: Its Clinical Significance.

By Alfred J. Zobel, M. D., of San Francisco, Cal.

The condition of patulous anus results from an abnormal loss of tone in the sphincter muscles, which may be due to either a fault intrinsically within the muscle, or to some disturbance in its nerve supply. When purely muscular the cause may be a direct injury to the muscle; an infiltration by a malignant or a syphilitic growth; a participation in a general muscular weakness; or the presence of a foreign body in the rectum which prevents the muscle from completely contracting. When the nerve supply to the sphincters is at fault the causative lesion may be either central or peripheral.

Complete fecal incontinence does not necessarily follow when the anus becomes patulous. The external sphincter, when but slightly affected, sometimes is assisted in performing its function by an extra effort of the will and through aug-

menting the muscle's action by strongly contracting the glutei muscles and bringing them together.

A brief report of a few very interesting cases of patulous anus is given to illustrate the different causes of this condition; among them being a case of infiltration of the sphincters by a carcinomatous growth low down in the rectum; a case, the result of pederastic practices; a case the result of a participation in the general alcoholic neuritis; cases where it occurred in low intussusception of the bowel in children; and two cases where it appeared as one of the early signs of locomotor ataxia.

The Surgery of Colonic Constipation.

A Report of Thirteen Cases.

By Louis J. Hirschman, M. D., of Detroit, Mich.

After presenting the histories, radiographs and reports of operative treatment of thirteen cases of obstipation due to colonic obstruction, dilatation, stricture and adhesions, Dr. Hirschman has formulated several principles in dealing with his cases requiring colonic surgery. They are epitomized in the following conclusions:

1. Most cases of chronic constipation are colonic in origin and many are obstructive in type.

2. Many cases of so-called chronic constipation are therefore really colonic obstipation.

3. Many cases of colonic obstipation suffer from chronic dilatation of the colon with or without ptosis.

4. Radiography is a most vital necessity in the diagnosis of all cases of chronic interference with bowel function. Its negative value may be greater than its positive.

5. A chronically over-distended colon, whether adherent or not, never again becomes a normally functionating bowel.

6. Intestinal adhesions usually tend to recur in increased intensity, and adhesions only cause symptoms when put under stress or tension.

7. The prevention of tension in physiologic rest to the affected organ and colonic rest is obtained only by colectomy, colostomy, or exclusion.

8. Colectomy as advocated by Lane is an operation seldom advisable and has many obvious objections from the standpoint of patient and physician. It is too grave a procedure to be undertaken except in the most aggravated cases.

9. Strictures, neoplasms, and other obstructions should be removed by excision of the diseased tissue and lateral anastomosis of the bowel.

10. Exclusion by ileo-colostomy is safe, easy to perform, and most satisfactory in the restoration of normal peristalsis and consequently normal health.

11. Results speak more eloquently than words. After an experience with nearly fifty cases requiring exclusion or resection of the colon for obstructive constipation with but one failure, I feel fully justified in recommending it to your careful consideration in all cases of aggravated colonic obstipation, whether congenital, post-operative, or dependent on some mechanical obstruction or narrowing of the bowel.

The Roentgenologic Method of Examining Cases of Constipation and Obstipation—A Method of Visualization of Abdominal Lesions of the Intestinal Tract.

By Arthur F. Holding, M. D., of New York City, N. Y.

The author noted that current textbooks on diagnosis written by eminent authorities are still copying cuts which were drawn by some artist rather than by an anatomist. Let us hope that the striking proof furnished (by the X-rays) of the fallacy of such teaching will be effective, and perhaps not one of the least results will be to cause true illustrations to be placed before our students' eyes.

The normal position of the colon and the parts of the intestine that can ordinarily be visualized by means of bismuth ingesta and the X-rays, are:

(1) The first portion of the duodenum; (2) the jejunum; (3) the ileum; (4) all parts of the colon; in some cases the second and third portions of the duodendum and the appendix can be visualized.

The accuracy, reliability and interpretation of findings by this method, however, may well receive our careful attention.

In the first place, this method does not cause gastro-intestinal symptoms, such as nausea, vomiting, diarrhea, constipation, gastro-intestinal or general symptoms, other than are present when buttermilk alone is ingested; it is therefore logical to assume that the buttermilk-bismuth mixture does not irritate the mucous membrane and gives a true picture of the motor activities of the patient's intestines.

By fluoroscopy and by radiography in the erect or prone positions, or both, an accurate outline of the lumen of the tract can be obtained, especially where there is any obstruction to the onward progress of the intestinal contents. The individual peristaltic waves can be accurately registered on a special photographic emulsion that is far more sensitive than the human retina, and the progress of the peristaltic waves can thus be seen functionating under normal conditions, the patient and his abdominal contents not relaxed by general anesthetic; the secretions and motility not disturbed by the presence of an irritating foreign body such as a stomach tube; the conclusion not based on inference deduced from chemical reactions of juices obtained by abnormal and irritating measures. The organic outline obtained in X-ray plates is even more conclusive and reliable than the information obtained by the sense of touch, whether that be applied over the intact abdominal wall or to the viscera laid bare by an exploratory incision. The radiographic emulsion and the retina are the two most sensitive methods of observation possessed by man, far outranking in their acuteness either the drum, membrane or the sense of touch. It has been contended that the abdominal operation was more accurate than an X-ray examination, because it laid bare the "naked truth." The finality of this argument is based more on the sound of the words than in fact, as anyone knows who has had an opportunity to use both methods on the same case.

On the other hand, there is great danger of arriving at wrong conclusions in using the X-ray method, especially when the examination is based on too few plates or is only an examination of a suspected part of the thirty odd feet of intestinal canal.

We must not let seniority interfere with our recognition of the superiority of methods employed by us for diagnosis. No progressive proctologist or surgeon should depend on any one method, but should use them all in examining cases, and in obscure cases he should not hesitate to insist upon supplementing the more common methods of examination with a radiologic examination, regardless of the expense involved.

The various lesions and conditions that have been successfully shown by the X-ray method are—atonic and spastic constipation; congenital anomalies of the tract such as non-rotation of the cecum and narrowing or insufficiency of the ileo-cecal valve; adhesions; kinks, with or without adhesions (including Lane's); ulcers; tumors within the canal and tumors pressing upon the intestines from without.

It must be borne in mind that a palpable tumor disappearing after the administration of an enema or a cathartic, even if followed by improvement in the patient's condition, is not proof that the tumor was feces.

The Roentgenologic method of clarifying difficult conditions present in patients will no doubt be gladly welcomed and widely utilized by surgeons, who, as a class, deserve our greatest respect and admiration for their courage in attacking many ordinarily undiagnosible conditions by cutting boldly into the abdomen and making their diagnosis by inspection, and thereupon instituting impromptu surgical procedures in order to correct the conditions found. Many times the condition found within the abdomen is entirely different from that which was expected. When these difficult situations can be accurately known before the operation is begun; when the surgical procedures can be accurately predetermined; when much time (previously lost exploring the abdomen) can be saved; when the duration of the patient's anesthesia can be proportionately shortened; when the surgeon will be saved the tremendous nervous strain and responsibility of emergency decisions and procedures, the surgeon must recognize that his operative statistics will necessarily be better, his patients are going to recover quicker, and more of them, and finally the years of a surgeon's own life and usefulness will be increased.

The only great drawback to the general adoption of this method is its necessarily great expense.

Valvotomy.

By George B. Evans, M. D., Dayton, Ohio.

Valvotomy as a factor for the relief of proctitis.

Valvotomy as a factor for the relief of obstipation and constipation.

Valvotomy as a factor for the relief of distinct and isolated ulceration of the distal side and adjacent to the valve.

Valvotomy as a factor in the elimination of bladder and prostatic symptoms reflexly.

The location of the valves. Every case of valvular trouble is accompanied by pathological changes in the valves, and if in the valve, then in the adjacent tissues.

Valvular obstructions are prolific of more trouble than we give them credit for.

Valvular obstructions are causative factors in the production of obstipation in a large per cent of our cases.

Valvotomy is a justifiable operation, as it not only relieves obstipation and constipation, but often causes reflex and neurasthenic symptoms to disappear; frequently ameliorates and even cures proctitis, and by virtue of the drainage it secures lessens the tendency to toxemia from intestinal origin.

Multiple Adenomata of the Rectum.

A Report of a Case with Symptomatic Relief by Simple Remedies.

By E. H. Terrell, M. D., of Richmond, Va.

This article was a report of a case of multiple adenomata of the rectum and sigmoid in a patient forty-two years of age, who had been suffering for the past five years. He had frequent stools with mucus, some blood and a great deal of tenesmus. He was having from eight to ten stools daily. He suffered considerable pain throughout the abdomen. Examination showed numerous small tumors scattered through the rectum and sigmoid. Microscopic examination showed these growths to be adenomatas. The bowel was intensely inflamed and contained many ulcers. Under irrigation of the bowel with boric acid and the administration by mouth of castor oil and aromatic syrup of rhubarb, improvement was almost immediate. In three and a half months the patient had gained seven and a half pounds, and was comparatively comfortable. The tumors were reduced in size and the ulcers gradually disappeared. While the adenomatas are still present the patient is symptomatically cured.

Dr. Terrell emphasized the value of the administration of equal parts of rhubarb and castor oil, and thinks that

in simple ulceration of the rectum, this treatment alone is almost a specific. He calls attention to many reports of cases in which adenomatas of the rectum are supposed to disappear, and points out that this condition must be merely a hyperplasia with inflammation, and not true tumors, for the latter are permanent. As regards the predisposition of adenomata to become cancerous, he called attention to the fact that these tumors are benign and are consequently composed of mature tissue, so they can not themselves become immature tissue—which is malignancy. Instead of a malignant degeneration. it is likely that matrices of immature tissue have also been deposited where so many matrices of mature tissue are found, and the growth of the adenomata, with the accompanying inflammation and ulceration, stimulates these immature matrices to develop into cancer; or, else, immature matrices are formed from the ulcers, just as they develop from ulcers, in cancer of the stomach. The simple treatment which he proposed not only relieves the patient's symptoms, but by lessening the inflammation and curing the ulcers, it also decreases the chances for subsequent malignancy.

Pigmentation of the Rectum and Sigmoid.

By Jerome M. Lynch, M. D., of New York City, N. Y.

The paper was based on six cases which came under the observation of Dr. Tuttle and himself. He divided pigmentation into Exogenous and Endogenous.

Endogenous	Hemochromatosis.
	Pseudomelanosis.
	Melanosis.
Exogenous	Pigmentation due to Chemicals or Metallic Pigmentation.

He proceeded to discuss the origin of pigment, and considered Pick's theory concerning the origin of melanosis in pigmentation of the large bowel, particularly interesting.

It is as follows:

That the connective tissue cells possess an enzyme tyrosinase which converts aromatic bodies into melanin.

After having reviewed the subject of Pigmentation, he reached the following conclusions:

That hemochromatosis is of bacterial origin; that the extent of the disease is dependent upon the severity of the infection; that the probable source of infection is the intestinal tract, possibly starting as an intestinal putrefaction; that this intestinal putrefaction lowers the vitality of the tissues, and thereby the cells of the mucous membrane lose their protective properties, consequently bacteria find ready access to the portal circulation. As a result of this the chromogenic function of the liver is interfered with, consequently the liver becomes surfeited with pigment, and is not capable of abstracting the iron from the hemoglobin, with the result that an excessive amount of pigment is circulating in the blood. That the cells of the intestine probably have a selective action for these pigments, and as a consequence they are deposited in the tissue. That local hemochromatosis may be due to repeated local hemorrhages, followed by infection, and that as a result of this infection the bacteria cause a hemolysis of the blood, forming pigment which resembles hemosiderin, hemotoiden and hemofucin. That these pigments may, or may not, give a reaction for iron.

So little is known about the structural products of melanin or melanoids, that it is difficult to give the origin of those bodies. Undoubtedly there are several distinct melanins, and their origins must must also be distinct. The ferruginous melanins should be considered as originating from the blood pigment until further research proves the contrary. Most melanins yield endol, scatol and pyrol. It has been proved that the enzyme tyrosinase is present in the tissues, and further that this enzyme is

capable of converting aromatic bodies into melanin.

That Pick's theory is ingenious and worthy of consideration, we admit; but there are points that are hard to reconcile with our present conception of cellular activity.

It is hard to understand why he should attribute to connective tissue cells a highly specialized function; that this is directly opposed to all our preconceived notions of this cell, which heretofore has been supposed to have only one function —that of binding other tissues together, with an enzyme of its own nourishment.

It is a well-known fact that the cells of the mucous membrane have the power of neutralizing poisons and converting them into insoluble compounds. In the case of mercury and lead they are converted into sulphides, and as a result of this change, blackening of the tissues, somewhat resembling melanin, takes place.

Drs. Tuttle and Lynch believe the cases reported by the English observers were as stated, and should not have been included in Pick's series. Further, that as a result of the action of sulphate of hydrogen on the iron pigments, an insoluble sulphide of iron is formed, blackening of the tissues takes place. This is a separate and distinct form of pigmentation, and should not be confounded with melanosis.

Observations Upon the Relationship of Tuberculosis to Peri-Rectal Suppurations.

By Collier F. Martin, M. D., of Philadelphia, Pa.

The author has found pulmonary tuberculosis so frequently associated with his cases of peri-rectal suppuration that he determined to report a consecutive series of cases, with findings.

The report comprises 376 consecutive cases, 75% being males, and ranging in age from 7 months to 87 years. The majority of these cases (322) occurred in the most active period of life, from 20 to 60 years.

He divided his cases into four major groups: The actively tubercular (144 cases), the chronically tubercular (68 cases), the phthisenoid (20 cases), and those patients in apparently good health (55 cases). This would indicate that at least 212 cases, or 61%, were cases of known tuberculosis.

There were 309 operations performed on 306 patients, under various anesthetics; spinal anesthesia 145 times, ether 54 times, and local and other anesthetics on the remaining. He chose spinal anesthesia where no other preference was expressed by the patient or the attending physician, on account of the associated tuberculosis.

Following these cases for the past four years he has traced thirty-seven deaths, of which thirty-four died of active tuberculosis or its complications.

The abscesses or fistulæ in most of these cases could not be classified, from their appearance, as being locally tuberculous. Where the tubercle bacillus was easily recovered from the tissues or discharges, there was usually a very active pulmonary infection present.

The writer believes that the usual explanation of the association of pulmonary tuberculosis with rectal suppurations, lies in the fact that any pulmonary lesion, however small or inactive, may so alter the patient's vital processes and so lower the opsonic index, as to make him particularly susceptible to pyogenic invasion. The same may be said of pyogenic infections in general, but the peculiar anatomic conditions existing in the rectum and its very active physiologic function, makes this a fertile region for external and internal trauma with subsequent inflammation and infection.

Traumatism is considered to be the chief active factor in impairing the integrity of the tissues.

The writer emphasized the fact that a careful lung examination should be

made in all cases of peri-rectal suppuration. He also made a strong plea for a careful and extended supervision of the patient's general health for a long period after all surgical treatment had been discontinued.

The vital consideration in these cases is not the question as to whether or not the local lesion is tuberculous, but has to do with the presence or absence of active or latent tuberculosis in the patient, and his chances of having good general health after surgical intervention.

Ano-Rectal Disease Due to Venereal Infection.

By James A. McVeigh, M. D., of Detroit, Mich.

Venereal disease is an important factor in the etiology of disease in all parts of the human system. Regional relationship of genital organs to anus and rectum render the latter especially prone to this kind of infection. Venereal disease of anus and rectum, either direct, through practice of vicious habits, or indirect, or accidental, through extension of infection to these parts from other sources, Less direct infection of this nature in this than in foreign countries. Gonorrhea, chancroid and syphilis, the principal venereal factors in ano-rectal disease. Description of symptoms, diagnosis and treatment of these conditions when appearing in disease of the rectum and anus. Report of a case.

Further Observations on Pruritus Ani: Its Probable Etiologic Factor Based Upon Original Research.

By Dwight H. Murray, M. D., of Syracuse, N. Y.

This paper was a continuation of the work that he has been engaged in for the past two years and which he presented to the American Proctologic Society, at the Los Angeles meeting, in 1911.

From his experience, since discovering that a skin infection is the important factor in pruritus ani, he believes that we are now in a position to state that there may be two varieties of pruritus ani: one that may be coincident with some of the diseases of the rectum and in which the skin infection is not present. He designates this form as pruritus ani simplex; the variety which is chronic in its character and in which the skin infection is present he designates as coccigenous pruritus ani.

He states that he is continually seeing patients who have all varieties of rectal diseases, including chronic diarrhea and proctitis, in many of which there is a leakage of moisture upon the anal skin; in very few of these cases does he find pruritus ani, and he believes that when it is present it is coincident rather than having been caused by these discharges occurring in various rectal diseases.

He gives a résumé of an examination of 900 consecutive cases, in which he finds 490 cases of constipation, 369 of hemorrhoids, and 94 of pruritus ani. Of the 94 cases which gave a history of pruritus ani, he finds that 5.5% of the 900 cases examined who had pruritus ani were constipated; 2.3% had hemorrhoids; 1.2% had some form of anal growth; 2.2% had ulcerations; 2.5% had diseased crypts; 1.3% had hypertrophied papillæ; .03% had polypi; .03% has fistulæ. He believes that the relatively small percentage of each of these conditions that were present in the pruritus ani cases show that they were coincidental when present and could not be classed as causes of pruritus ani.

Thirty-two of these 94 pruritus cases have been examined bacteriologically by him and all of them showed streptococcic skin infection as the predominating condition.

He believes that the excess moisture and the infiltrated condition of the skin in these cases is due to the low-grade inflammation caused by skin infection, and is not the result of moisture coming from the inside of the anal canal.

He presented photographs of petri-plates of a typical case, showing the immense numbers of streptococci at the time of the first examination; another photograph of the same case showing that streptococci were not present in the culture taken from the anal canal, and another photograph of a petri-plate of the same case after four months of treatment (one month after itching had ceased), in which last photograph no streptococci were present.

He gives a report of his technic in greater detail than in last year's paper, because he has found that the last year's report was not understood by some physicians who had employed his method.

From some reports received he believes that stock vaccines will not give good results because they are made of a different branch of the streptococci family than the one causing pruritus ani.

He gives detailed reports of the cases treated, both of the first and second series, showing very marked improvement in all of the cases and cures, so far as present conditions are concerned, of others.

He presented a series of twelve control cases having a variety of rectal diseases, that are usually given in text-books as causes of pruritus ani, none of which had the disease, nor did they show a skin infection.

He said that the conclusions of the first year's work still hold true, and he gave the conclusions of his second year's work as follows:

1st. It is shown by the nine hundred consecutive cases of rectal diseases that constipation and hemorrhoids, or any lesion, are coincidental or may be predisposing, but not the exciting cause of pruritus ani.

2d. Even when there is a discharge tococcic or other infection of the skin. about the anus it is not the actual cause of pruritus ani, unless there is a streptococci or other infection of the skin. They may exist together, but are then only a coincidence.

3d. All investigators, in making cultures, should use, in addition to the hard media, the liquid media and Gordon's series of carbohydrates, if they wish to differentiate the streptococci and other bacteria.

4th. Avoid excessive reaction.

5th. Use small initial doses.

6th. Give subsequent injections only after the previous reaction has completely subsided.

7th. He suggests the following change in the nomenclature of pruritus ani, by recognizing two varieties: pruritus ani simplex, and pruritus ani coccigenous.

Colonic Dilatation (Congenital and Acquired) as a Factor in Chronic Intestinal Obstruction (Obstipation).

By Samuel G. Gant, M. D., of New York City, N. Y.

The author stated that his experience warrants the belief that both acquired and congenital (Hirschsprung's) dilatation of the colon is fairly common, and that they respond satisfactorily to treatment (usually surgical). He said that non-congenital dilatation of the bowel might result from paresis, gormandizing, digestive disturbances or chronic intestinal obstruction, however caused, and when present leads to constipation, fecal impaction, distension of the bowel, angulation, twisting and ptosis of the colon. He called attention to the fact that this class of patients suffered much less from intestinal auto-intoxication than persons afflicted with acute constipation. In his cases, the colon completely filled the abdomen, measured from three to many times its normal size, was considerably thickened, characterized by dilated blood-vessels and closely resembled an enormously hypertrophied stomach—for which it was mistaken in two instances. He mentioned having personally observed seven cases of

Hirschsprung's disease and a still greater number of acquired dilatation, wherein the patients had an evacuation every two or three weeks, following purgation and frequent enemata; except in two instances, that of a young boy, who moved his bowels only once in two months, and of a young woman who succeeded in accomplishing this but four times yearly. He said the chief manifestations of the condition were those of chronic constipation and fecal impaction, plus malnutrition, abdominal distension, pot-belly, extraordinary length of time between movements and very large amount of feces discharged when an evacuation occurred, and that the diagnosis is fairly easy in the presence of the above symptom complex, because, with the aid of inflation and palpation or the assistance of the X-ray, the size and position of the colon can be defined.

The writer maintained that temporary improvement occasionally follows medication and physical measures, which strengthen the bowel or minimize the effects of auto-intoxication consequent upon fecal retention, and that patients may for weeks or years be kept fairly comfortable when given close attention and the bowel is kept open with lubricating oils, laxatives and frequent high enemata, but that a cure is not possible except through one of the following surgical measures, viz.: (1) Coloplication; (2) colopexy; (3) resection; (4) intestinal exclusion; (5) colostomy; (6) tapping.

He found coloplication effective in both congenital and acquired dilatation, without bowel displacement. Colopexy proved satisfactory where there was ptosis with moderate dilatation, but, in aggravated cases where the bowel was both enormously dilated and markedly ptotic, he advised coloplication and colopexy, using the infolding sutures for suspensory purposes.

He advised resection of all or part of the colon where it was irretrievably large, displaced or bound down by adhesions, and reported a case where the sigmoid flexure, descending colon and left half of the transverse colon were excised.

Exclusion had proven satisfactory, and he reported five cases treated by dividing the ileum near the cecum and completing the exclusion by ileo-sigmoidostomy.

Colostomy was looked upon with ill-favor, because patients strenuously object to an artificial anus, and a secondary and dangerous operation is required to reëstablish continuity of the intestines.

Tapping, he said, deserved no consideration, because it is unscientific, dangerous and ineffective.

In closing, Dr. Gant said that he frequently combined the above operations with appendicostomy or cecostomy, so that through-and-through irrigation could be immediately established and the period of convalescence shortened. He also stated that colonic exclusion and colostomy were considerably less dangerous than resection, and were usually effective, since the bowel rapidly contracts after their establishment.

Acute Post-Operative Intestinal Paresis.

By J. A. MacMillan, M. D., of Detroit, Mich.

1. Definition: A paralysis of a portion of the intestine which suddenly dilates and becomes the receptacle for gas and fecal material.

2. Etiology: Not known, but probably due to sepsis, trauma, etc.

3. The lesion is probably in the sympathetic nervous system.

4. The treatment consists of gastric lavage, enemata and enterostomy.

5. Precautions attending a secondary operation.

Prophylaxis and Treatment of Post-Operative Retention of Urine.

By Frank C. Yeomans, M. D., of New York City, N. Y.

Ascertain and correct, if possible, lesions of the urethra and bladder in advance of operation.

Physiology of urination. Factors that interfere with it after operation.

Prophylaxis—urinary antiseptics and posture.

Treatment—suggestion, local applications, medicine, standing. Aseptic catheterization.

Intra-Rectal Rupture of Suppurating Sinus From Hip-Joint Disease.

By Ralph W Jackson, M. D., of Fall River, Mass.

To meet the difficult problems presented by an unusual case involving the rupture, internally into the rectum, and externally near the anus, of a sinus from a tubercular hip, the writer has sought, by radiographic study, research of literature, and by a correspondence with proctologic and orthopedic authorities, information as to frequency, pathology and operative possibilities of such cases; and with the following conclusions:

1. That intra-anal or rectal rupture of a coxitic sinus occurs rarely, but not with extreme infrequency.

2. That such opening involves probably considerable mixed infection of the joint beyond what would occur if the opening were external.

3. That likewise tubercular infection of the rectum might arise.

4. That intra-anal opening is quite easily treated and much of the mutual risk of infection removed.

5. That intra-rectal opening is in most cases (unless the sinus approaches from low down) too high to turn aside in any way and give an external discharge, and consequently the risk must continue.

6. That operating for such purpose is likely to create at once a complete rectal fistula where none existed before, because of the surgical difficulties in the way of securing permanent closure of the internal opening.

7. That it is a very rare and most unfortunate occurrence for such an abscess to point both externally and internally; an external incision should be made, if sure that internal rupture has not occurred; but avoided, if possible, if it has occurred, because of the fistula thereby created.

8. That whatever the etiology, such a fistula is a particularly troublesome one, and the wisdom of trying to better it surgically is fairly debatable ground.

Preliminary Report of Two Cases.

(a) Keloidal Tuberculoma
(b) Fibromatous Keloid.

By Alois B. Graham, A. M., M. D., of Indianapolis, Ind.

The writer presented a brief preliminary report of two exceedingly rare rectal cases. Both of the cases are of interest in that they emphasize the following points:

1. A benign neoplasm, involving the peri-anal, peri-rectal and surrounding structures, may be the end-result of an inflammation of these structures.

2. An inflammation of these structures is due, in a large proportion of cases, to extension from an anal or rectal inflammation.

3. A benign neoplasm may produce a marked deformity of the structures which it involves. (The writer showed photographs of his two cases.)

4. A careful pathologic study is essential for making a correct diagnosis of the neoplasm.

5. A correct diagnosis of the neoplasm can be made, and yet its etiology remains vague.

A history of the cases was given, together with a description of the operations performed. The pathological report shows one case to be keloidal tuberculoma; the other fibromatous keloid. The first case insisted upon leaving the hospital and was discharged as

improved. The second case, that of fibromatous keloid, is still under the observation of the writer. Hence the preliminary report.

In conclusion, the writer stated his object for reporting these two cases. He is firm in his belief that an anal or rectal inflammation was the origin of the diseased conditions presented by these patients. Both cases, therefore, emphasize the necessity for and the importance of rectal examinations. It matters not how slight the ailment may be, a careful inspection of the anus and rectum should be made. If such a rule were followed by every physician and surgeon, such case reports would not be possible.

Some Practical Points Gleaned from the Observations of a Proctologist.

By Samuel T. Earle, M. D., of Baltimore, Md.

Dr. Earle reported a case of primary tubercular ulceration of the right buttock, which was not connected with the rectum by a fistulous tract. In this respect it differed from the one reported by him in his work on "Diseases of the Anus, Rectum and Sigmoid," Figure 62, page 201. It was excised by the thermocautery knife, after which it healed very promptly.

Dr. Earle also reported a very aggravated case of pruritus ani, which had resisted local applications, autogenous vaccines and treatment by the X-ray. Under local anesthesia he found an ulcer over the posterior commissure just above the internal sphincter, which connected on each side with numerous submucous and subcutaneous superficial fistulæ which enveloped the entire anal margin and connected with each crypt of Morgagni. The ulcer was incised, the scar tissue at its base removed, and the fistulous tracts were all opened up. There was only an occasional twinge of itching following the operation, and he made a speedy recovery.

The Subnormal Colonic Function as a Diathesis.

By J. Coles Brick, M. D., Philadelphia, Pa.

The writer was led to investigate the causes of a persistent case of constipation, which had existed since childhood, and which was of an average duration of seven days, in a young woman of eighteen who was in seemingly good health, but whose father having had the same condition and who had subsequently developed a case of chronic arthritis deformans. The young woman had been treated by many doctors and by many methods, but all without any more than temporary success.

Resort was finally made to X-ray examination after giving a bismuth meal. The plates showed that at two points, viz.: the cecum and the rectum, the colonic contents remained for three days, and operative measures were decided on. No abnormality was found except an old and thickened appendix, containing three concretions, and the tip being adherent to the ovary. As there were some moderate-sized hemorrhoids present, these were removed at the same time as the appendix, and the patient made a good recovery. The X-ray plate showed a very moderate degree of visceroptosis, and a "Storm" belt was ordered. The patient has had a regular bowel movement daily, with the use of a mild laxative, which it had been impossible to produce at any previous time.

Examination of the X-ray plates showed a bilateral calcification of the costal cartilages, which the writer thought was an early symptom of arthritis deformans, and after discussing the various theories of the cause of the disease, accepts the theory that it is a toxic trophoneurosis affecting the cerebro-spinal nerves, with its infectious focus in the gastro-intestinal canal.

The essayist believes that all cases of persistent constipation should be examined by all the means at our command, and finally, not only by the administra-

tion of bismuth by the mouth, but by injection, with X-ray examination—conditions requiring operative interference will frequently be found by this means, and corrected surgically.

Arthritis deformans is a most ancient disease, and evidences of many cases are shown to have existed before the Pyramids were built, and that it is not only possible but probable that the infection comes from the intestinal tract, and that if the cause is removed early before the destructive changes have occurred these cases can be cured, and even the advanced cases have their progress arrested.

The Three-Step-Operation in Tumors of the Sigmoid and Color.

By James P. Tuttle, A. M., M. D., of New York City, N. Y.

Dr. Tuttle described the operation as follows: Incision is made in the outer border of the left rectus. Tumor is brought out on the abdominal wall. Peritoneal layers of the meso-sigmoid are incised well above and below the tumor, and stripped back so as to expose the blood-vessels, fat, and glands, which may be in the mesosigmoid; the latter are stripped toward the intestine until the blood-vessels are bare and the supply to the bowel is easily visible. The sigmoidal artery is tied in two places and cut between and the proximal stump dropped back into the abdominal cavity. The raw surface of the abdomen is covered over by suturing the two peritoneal layers of the meso-sigmoid together over the arterial stump. The two legs of the sigmoid are sewed together laterally to make a spur, after the method of Bodine. The peritoneum is sewed around the bowel; the muscles drawn together; the skin wound closed, attaching it to the bowel. In forty-eight hours the tumor is excised by a V-shaped incision. Two days later, the spur is cut away by the pressure-forceps. After this is completed a long rectal bougie is passed up through the bowel beyond the artificial anus, in order to press the spur back and obtain a large caliber at the site of the resection. When the wound made by the pressure-forceps is healed, the artificial anus is closed by the extra-peritoneal method of the author.

The X-Rays as an Aid in Making Diagnosis of Conditions in the Rectum and Other Portions of the Large Intestines.

By J. R. Pennington, M. D., of Chicago, Ill.

He stated that while the rectum is easily inspected by various specula, and the sigmoid is less readily accessible by the use of sigmoidoscopes, such as the one with insufflation devised by him, the colon is inaccessible and its exact position difficult to ascertain. Very often it is also difficult to determine and locate pathologic conditions in the large intestines.

Until recently the means of diagnosis have been limited to those used in other portions of the alimentary canal, viz.: Inspection after dilatation of the bowel with air or water, palpation, percussion, and trans-illumination. All of these are open to the objection that they are uncertain.

The writer observed in the latter part of 1899 that by introducing some agent into the large bowel which would cast a shadow, the X-rays may become useful in making a diagnosis of conditions in the twin cavities. It is only recently, however, that such procedures have become of practical value.

A bismuth meal is useful in diseases of the stomach or duodenum, the agent being suspended in milk, acacia water, thick soup or some similar vehicle.

But for the large bowel, the action of bismuth per os is very slow. One author estimates that it requires from twelve to fifteen hours for bismuth mixture to

reach the ileo-cecal valve; about twenty-four hours to gain the transverse colon, and thirty-six hours to penetrate to the sigmoid. By the method advocated this is done, so to speak, instantaneously.

Coming now to the technic: The patient's bowels are first cleansed by means of laxatives and injections. He is then placed in the knee-shoulder position, and from twenty-five to thirty ounces of the mixture used for casting the shadow injected into the large intestine. For this purpose the author uses an ordinary irrigator and a short rectal tip. A long rectal or colonic tube for administering the injection is unnecessary. After the suspension is injected the patient lies on his right side for a few moments so part of menstruum may pass into the cecum. He is then placed in either dorsal or ventral position on the radiographic table and the picture taken.

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SALVARSAN IN PANCREAS AND LIVER AFFECTION.

It is our duty in every case of diabetes to order a Wasserman reaction, as the condition may be due to a local process in the pancreas. The patient whose history is related by Umber, in *Muench. Med. Wochenschrift,* excreted as much as 5.4% glucose without acetone. He lost considerably in weight, his stools were fatty and contained undigested meat, and a tender induration could be felt in the region of the pancreas. Since the Wasserman reaction was decidedly positive 0.4 grams of salvarsan were injected. The effect was almost immediate. The induration disappeared and no sugar could be found in the urine, though the patient was on a mixed diet. Though the patient's condition had been very serious, he steadily gained in weight, and at present, a year after the injection, is apparently in perfect health. A fact not generally known is that many cases of acute yellow atrophy of the liver are syphilitic in origin, and are amenable to treatment with salvarsan. In one case there were all the typical symptoms; the urine contained many crystals of leucin and tyrosin, and the liver appreciably decreased in size within twenty-four hours. An intravenous injection of salvarsan, 0.4 grams, checked the process at once, and the patient rapidly recovered from an affection which otherwise would have been surely fatal. The importance of performing the sero-reaction in all cases of doubtful etiology may thus be life-saving.

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IONIC MEDICATION FOR RINGWORM.

According to Dr. James R. Riddell (*Glasgow Medical Journal,* February, 1912), about 2% of cases of ringworm of the scalp treated with X-rays become permanently alopecic, and on this account he does not recommend the use of the rays as a routine therapeutic measure. He believes that the ionic method will carry the fungus-destroying drug right down to the follicles. The method he adopts is very simple. The head is first shaved and a solution of a 1% mercuric chloride or a 1% aqueous solution of iodine in potassium iodide is well rubbed into the affected areas. Folds of lint, 16-ply, are next soaked in the same solution, laid upon the scalp, and over all is accurately fixed one of the electrodes, made of copper gauze. The current, consisting of 15 to 20 mmamps., is then turned on for as long a period as possible, 40 to 50 minutes, the other electrode being applied to any convenient limb. Two or three applications are given weekly, for an average of thirteen sittings, and the scalp is washed daily with an antiseptic. The results have been uniformly good, and the method is stated to be absolutely safe, both as regards late effects and to the appearance of baldness, while its simplicity of application is a great point in its favor.

CURRENT MEDICAL LITERATURE.

LIMITATIONS OF THE WASSERMANN.

R. B. H. GRADWOHL, M. D., in the *Interstate Medical Journal*, propounds the query, Can we prognosticate from Wassermann examinations? Can we say to a patient that because he has received careful treatment and has a negative reaction he can be assured that he will not develop tabes or paresis? Emphatically no, says the author. Are we warranted always in suspending treatment when the reaction becomes negative? No. We likewise know nothing as to the significance of the persistence of the reaction in the so-called late-latent period. A positive Wassermann reaction means simply that here we have a symptom of syphilis, and that such a case must be treated as syphilis. The persistence of the reaction has no great prognostic or therapeutic importance.

The writer alluded before to the examination of cerebrospinal fluid. His attention was kindly turned to this material some time ago by Graves, of St. Louis, who suggested to him the use of the Hauptmann method of examination of this fluid. As outlined by Hauptmann, far better and more accurate results are obtainable from examination of spinal fluid by using large quantities than could be obtained by using the 0.2 c.c. amount originally advised. In other words, this material is to be handled differently from blood-serum. Hauptmann uses five tubes containing amounts of fluid as follows: 1 c.c., 0.7, 0.6, 0.4, 0.2, with corresponding salt solution. In this way we get positive results where we would not get them if we used only 0.2 c.c., also we get some idea of the degree of the reaction. This method has been eminently successful in detecting the Wassermann reaction in spinal fluid. In Graves's service, the four reactions of Nonne for syphilis are rigidly looked for—namely, the Wassermann reaction of the blood, the Wassermann reaction of the cerebrospinal fluid, the Nonne-Appelt globulin reaction, and the lymphocyte count. In cases of syphilis of the cerebrospinal system, one or all of these reactions may be present. Sometimes the blood is negative and the cerebrospinal fluid positive, sometimes vice versa, sometimes both may be present. A positive of the blood and a negative of the spinal fluid is of considerable importance in differential diagnosis. For instance, a positive of the blood in the absence of a similar reaction in spinal fluid may indicate that the patient has a generalized syphilitic infection, and that his neurological symptoms are not due to an involvement of the cerebrospinal axis.

In closing the writer should say that the Wassermann reaction placed where it belongs—namely, secondary to the clinical manifestations, is of considerable importance in working up the diagnosis of lues. It is a symptom, and only a symptom, and should never be given greater consideration or thought than simply a symptom. The writer does not believe that this or any other laboratory test should outweigh a group of well-marked clinical manifestations. When positive, it should be an important factor in assisting in a diagnosis. When absent, manifestly it should not serve in any sense to eliminate the possibility of syphilis. At times a wide gap is left by a negative Wassermann reaction, particularly in supposed tertiary cases. In such instances, Noguchi's new luetin test, in the writer's opinion, will serve at times as a means of adding another important symptom where the Wassermann test has failed.

EXCERPS FROM CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC, MEDICAL SCHOOL AND HOSPITAL.

Three Cases of Sterility Secondary to Adnexa Disease: Cured by Operation.

PRESENTED BY DR. HENRY V. HOLCOMB.

These three cases were of interest as showing what could be accomplished by conservative work.

The first case was a woman nineteen years of age who had had a previous miscarriage in the sixth week of pregnancy, and gave symptoms showing pelvic trouble. Operation by Dr. Child showed both ovaries bound down by adhesions, a cyst attached to the left tube, and the tubes closed. The cyst was evacuated, the adhesions broken down, and the tubes probed with a fine bougie their entire length. Convalescence was uneventful. Four months after the operation she was free from any abdominal symptoms. Menstruation regular. She later showed symptoms of a floating right kidney, which was anchored by three silk stitches. Convalescence from this operation was also uneventful. February 2d she had her last menstruation, and by the end of March she began to have morning vomiting, with swelled breasts, and all the evidences of pregnancy. She had a precipitate delivery of a seven and one-half months' fetus in the following August. The child died, but the mother is alive and well.

The second case was somewhat similar. The patient came with all the abdominal symptoms of inflammation of the appendages. Dr. Child found on operation that both ovaries were prolapsed and bound down by adhesions, occluding the tubes. After her operation she returned home well. One month after the operation she became pregnant and was delivered of a full-time child.

The third case was a woman of thirty-one years of age who had been sterile for thirteen years. She had a former child and was anxious to have another. She had pelvic pains bilaterally, painful and profuse menstruation, which had been present for the previous four years. Examination showed a retroverted uterus, and tender appendages. Local treatment gave no relief. Operation in 1909 by dilatation, curettage, followed by laparotomy, showed the same adhesions of ovaries, with closed fimbriated extremities as in the other two cases. The same method of treatment was followed, and the patient made an uneventful recovery. She gained in weight after the operation, and in the following November was delivered of a normal child.

None of the above three cases came to be operated upon for sterility, but Dr. Holcomb laid stress upon the desirable outcome of cases who have primarily adnexal trouble, and in the correction of this secured the desired pregnancy. Dr. Holcomb said that as far as could be ascertained these cases were free from gonorrhea.

Dr. Child said that the cases reported were very interesting to those who were striving for the correction of sterility where the fertility of the husband was unquestioned. He had felt that it was important to thoroughly probe the tubes in these cases to insure an absolute patency. With the adhesions of the adnexa corrected, malpositions replaced, and the toilet of the uterus complete, he thought that there was field of work open to the careful and discriminating surgeon, which would be effective in overcoming some hopeless cases of sterility.

Dr. Holcomb, in closing the discussion, said that the tubes were absolutely closed and the fimbria clubbed so that in the ordinary course of events pregnancy would have been impossible.

Specimen of an Aborted Right Kidney With Greatly Enlarged Opposing Kidney Non-Functionating.

PRESENTED BY DR. CHETWOOD.

Dr. Chetwood illustrated the value of the colorimeter test in measuring the capacity of the kidney function. His

patient, on cystoscopic examination, showed apparently normal ureteral orifices from both kidneys. The left ureter was easily catheterized, withdrawing urine of low specific gravity, deficient in urea and a number of leucocytes: pus, though present, was in insignificant amount. The right ureter was rigid and impossible to catheterize and the cystoscope showed a certain amount of purulent granular material slowly exuding. The patient was then subjected to the colorimeter test, made by injecting 1 c.c. of phenol-sulphone-phthalein, after having previously emptied the bladder. At one and two-hour intervals the urine was collected from the bladder. The returned percentage of color was so low that the individual kidneys were tested separately, resulting in an absence of color on the right side, and a very low color-return on the left.

Operative treatment seemed necessary, and after taking X-ray pictures to rule out the possibility of a calculus, the patient was operated upon. Operation showed a vestiginary right kidney, with a ureter entering the bladder, but having a sacculated distal end. On the left side, which was unsuspected, there was a sac almost as large as the small intestine, which entered the kidney. A large perinephritic pus sac occupied one side of the kidney and practically no kidney tissue remained even in this organ to secrete. The patient could not possibly have lived as proved by the colorimeter test and subsequently verified by autopsy.

Dr. Sinclair said that in Dr. Chetwood's case there had been a slight previous injury many years ago, but aside from blood in the urine for a few days no recurrent symptoms of any kind had occurred.

Dr. Wyeth said a very interesting phase of the case was the extremely limited excretory area eliminating urea. Considering the good health the patient enjoyed he thought the skin must have employed an important part in the excretion of urea.

THE NEW SALVARSAN.

As noted in the last number of the MEDICAL BRIEF, Professor Ehrlich has come out with an improved product, which he calls "neo-salvarsan." Through the action of sulphoxylates he has succeeded in converting the product into a readily soluble form, of neutral reaction. According to the *Post Graduate*, the new salvarsan is not less effective in its action on syphillis and appears to be less toxic than salvarsan. Vomiting and diarrhea which occasionally follow the intravenous injection of salvarsan have not been observed after neo-salvarsan, and a slight rise in temperature has been noted only in a few recent cases in which that symptom may be attributed to the rapid destruction of large number of spirochetæ. Neo-salvarsan is 50% heavier than salvarsan and the dose is correspondingly larger; *i. e.*, 0.9 grams neo-salvarsan is equivalent to 0.6 of salvarsan. The solution of the drug is made in cold water without the least difficulty, freshly distilled sterile water being used. Saline solutions give a cloudy precipitate; no alkalai is used. The solution should be injected immediately after its preparation. In addition to the great technical advantage of simplicity in the preparation of the solution, the lesser toxicity permits of larger doses than have been employed heretofore. Prof. Schreiber, of Magdeburg, who has been using neo-salvarsan experimentally for nearly six months, injects as much as 1.5 grams (=1.0 gram salvarsan) in an adult male. His regular treatment consists in the intravenous injection of 0.9 neo-salvarsan (=0.6 salvarsan) every second day till four injections have been made; that is, four injections in six days. With this treatment the Wassermann reaction in the majority of cases becomes negative in two weeks. The early hope of a therapia sterilisans magma may after all prove not to have been an empty dream.

DISREPUTE OF THE WASSERMANN REACTION.

M. L. Heidingsfield, in the *New York Medical Journal,* deplores the fact that Wassermann reaction has reaped a share of disrepute. Personal experience leads the writer to concur with those who have given the matter much study and investigation, particularly the men of careful, concise, painstaking laboratory methods, that it is absolutely unwarranted. There are a few principles relative to the Wassermann test that have escaped general notice and which have led many into serious and unfortunate error. The Wassermann reaction is not a test for active syphilis, namely, the spirochetæ or their toxines, but it is a test for the products of their reaction, namely, the antibodies. Every patient with syphilis, until cured, must have spirochetes, but no patient will have antibodies until that particular patient inaugurates a fight against the invasion. There are patients who doubtless put up such a weak resistance that antibodies are never formed in large enough number a show a positive Wassermann reaction; that is particularly the case in severe and malignant syphilis, where the patient proceeds to a rapid and unfavorable termination, with active manifestations of syphilis and negative Wassermann reaction. The writer has observed a number of such cases, several of which became Wassermann positive only after one or more repeated administrations of salvarsan.

It is also noteworthy that a negative Wassermann test frequently attains in locomotor ataxia, and in cerebrospinal syphilis. It is a clinically observed fact that syphilis frequently directs its destructive influence against one particular system, such as the skin, mucous membranes, viscera, osseous, circulatory, or nervous systems. If the disease, therefore, is directed chiefly against the cerebrospinal system, it is possible that the reaction is therefore also limited to this system. In such an event, it is clear that the blood may show a negative Wassermann reaction and the spinal fluid a positive one. If this is true, repeated spinal punctures for Wassermann control, globulin reaction, and leucocyte count becomes as much an essential *sine qua non* in the satisfactory and successful treatment of cerebrospinal syphilis as blood examinations in cases of syphilis directed elsewhere.

Another fundamental cause of disrepute is faulty technique. The Wassermann test is an exceedingly intricate and delicate biochemical examination. No one is qualified to undertake such an examination except after careful training and special fitness. (These statements and what are to follow are general inferences, not directed against any particular individual or set of individuals. The writer sincerely hopes they be accorded no personal application and that they occasion no personal affront.) In addition, the individual must possess an unusual degree of conscientious sense of duty, carefully and faithfully well performed. Any individual can slop through a Wassermann reaction without serious difficulty, and under the circumstances it may be immaterial whether the equipment for the test be absolutely inadequate or of the highest degree of perfected efficiency. Extreme cases, strongly positive and absolutely negative, may permit a possible reading; these, as a rule, do not require a Wassermann test, but the work can possess little or no material value if the border line and less positive cases can not be distinctly read. The Wassermann reaction is a test of such delicate qualitative and quantitative character, involving so much attention to numerous special details, that it requires such specialized and undivided attention which can not be accorded by the average practitioner of medicine. Confrères have confided to me that the Wasser-

mann test is of no aid or service in diagnosis and treatment; that the readings were unsatisfactory. Investigation in some of these instances revealed inadequate equipment, careless and indifferent methods, inattention to proper details. In one instance, the individual was using the same uncleaned and unsterilized pipette for ten different serums! The intended slur of the physician who stated that the Wassermann test was unreliable because his examinations of his own and attendant's blood, which were distinctly nonsyphilitic, were positive, and those of two syphilitic patients were absolutely negative, requires no comment. It leaves only one inference, namely, a wretched Wassermann examination or a wretched diagnosis. Many instances have come to my notice of negative Wassermann tests, particularly from laboratories of smaller communities, which the writer has found to be strongly positive upon repeated examination.

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HEART COUGH.

Solomon Solis-Cohen, in the *New York Medical Journal,* relates that one of the early lessons in diagnosis which he received from his preceptor made an indelible impression. The patient had suffered for several years, intermittently, from a chronic cough, unattended with expectoration, but associated with considerable discomfort in the throat. She had been under the care of general physicians and throat specialists, so called, and had been treated with sedative medicaments of various kinds, inhalations, gargles, and even galvanocaustic applications — all without avail. Inspection of the pharynx showed a general, diffuse, dusky redness, with prominent follicles of deeper hue, sufficient to make a first-year student, when asked for his opinion of the case, confident that in calling it chronic pharyngitis, he could make no error. He was then asked to examine the larynx, which showed the same dull, diffuse redness, and modified his diagnosis accordingly to one of the laryngopharyngitis. He was then told to examine the pulse and heart. The pulse was somewhat rapid and feeble. No murmur was detected on cardiac auscultation, but the sounds were weak, and it was demonstrated to him by percussion that the area of dullness was enlarged. The throat symptoms, he was then told, were secondary and would disappear without any local treatment when the weak and dilated heart was restored to proper function by rest, regulation of diet, and the use, if necessary, for a short time, of a few drops of tincture of digitalis daily.

Since then, an experience of thirty years has brought many other such cases under observation. Sometimes there is only muscular weakness, sometimes dilatation, sometimes valvular lesion, sometimes muscular degeneration. In some cases there are congestions in other regions—in the stomach, for example, giving rise to symptoms termed "indigestion," and liable to be mistaken for chronic gastritis; sometimes affecting the liver; sometimes affecting the kidneys. In not a few cases, however, the only congestion evidenced by symptoms or found upon examination is that of the air passages; thus there may be engorgement, not only of the throat, but also of the turbinate bodies, which last might likewise be falsely interpreted as a local affection.

To return to the case which furnishes the text for this brief sermon, the words in which the distinguished physician emphasized for his pupil on that occasion, the broad general lesion to be drawn—beyond the mere diagnosis of laryngopharyngeal congestion secondary to cardiac enfeeblement as a cause of cough and similar symptoms—may be repeated as a lesson to other young men beginning the study or the practice of medicine: "Be a general physician or a specialist, as you may prefer, but whatever work you choose, do not be a one-eyed man."

SIMPLIFIED DRAINAGE IN ABDOMINAL SURGERY.

Lester Hall, in the *Medical Council,* thinks that the observant surgeon—especially he who dresses his own cases—must have long since become convinced that the most important and necessary thing to be done in an infected case is to establish adequate drainage. Experience must have taught him that in his anxiety to secure thorough drainage, he has gone too far. Beginning with the Micholitz drain—the handkerchief drain—filled with a great number of smaller strips or rolls of gauze which gave him trouble for days before they could be removed, owing to the growth of the granulations into the meshes of outer or enveloping gauze; then came the cigarette drain—gauze wrapped in rubber tissue which frequently became unwrapped with adherent gauze. Then gauze inserted in very thin rubber tubing effectively prevented adhesions save at the distal ends where the gauze projected.

All of these methods presented objections in this, that the gauze in each method became saturated and offensive too early to be removed. Its capillary capacity became exhausted, and it acted as an offending body.

To remove the Micholitz handkerchief before the healing process had cast it off, making the removal comparatively easy, was to tear up the newly-formed adhesions and open new avenues for infection.

To remove the gauze in either the cigarette or soft rubber tubing and leave the rubber behind was impossible.

Having been convinced for years that the process of drainage did not depend upon the material used, but that any substance which would not adhere but kept a patent opening and thereby established a vent was sufficient, and that intestinal peristalsis, with the respiration and descent of the diaphragm, would keep up all necessary drainage, I have for several years employed for this purpose the rubber tubing without the gauze, or a roll of rubber dam, with the most gratifying results.

Another objection to the gauze, the glass drain tube, or the ordinary flexible rubber drainage tube is (especially in appendiceal abscess) that the pressure of these drains invites the establishment of fecal fistula. Whilst this may occur in any case of necrotic appendix, my observation is that the opening in the cecum is not so large and closes much sooner where only soft rubber is used.

NURSING BY SYPHILITIC MOTHERS.

Hartshorn discusses this question in the *New York Medical Journal.*

Some men regard it wiser to discontinue nursing, both for the mother's and the child's sake, in all cases. Colles' law that a child born of a mother who is without obvious venereal symptoms, and which without being exposed to any infection subsequent to its birth, shows this disease when a few weeks old, this child will infect the most healthy nurse, whether she suckle it or merely handle it and dress it, and yet this child is never known to infect its own mother, even though she suckle it while it has venereal ulcers of the lips and tongue, has been disproved and the theory of germinal infection has been disputed by Metzenour.

Osler says that in a majority of these cases the mother has received a protective inoculation without having had the actual manifestations of the disease. He concludes that there can be absolutely no syphilis in the child without syphilis in the mother.

Doctor Ryder, Doctor Dorman, Doctor Strang consider syphilis a direct contraindication. Doctor Lobenstine says that personally he prefers not to allow it, unless the child shows an unmistakable sign of syphilis and the mother is robust. Doctor Painter says that nursing is not contraindicated in ante partum cases. It is post partum cases. Doctor Voorhees does not consider syphilis a contraindi-

cation. Doctor Brodhead thinks that it is not, unless it has been acquired, post partum. The child may get valuable medication through the milk, *e. g.*, salvarsan. Doctor Cragin says the syphilitic mother may nurse her own baby. Doctor Ramsay says he always feels safer in forbidding a syphilitic mother nursing the baby, as Colles' law occasionally slips. Doctor Ward believes that the ante partum infections are not a contraindication, but post partum infections are.

Doctor Knapp is uncertain, but thinks that if the mother was infected after the beginning of the pregnancy, and the child did not show positive signs, he would not have the child nurse. If the mother was infected before impregnation, and the child showed positive signs, it is possibly as well for the child to nurse. Doctor Kilbane believes that the manifestations are not present in cases where the infection is ante partum because of this immunity which the mother receives. As the fetus grows, a considerably larger amount of the toxines is overcome by the mother, so that at the birth of the child a protective immunity is established. He thinks that it is safe for the mother to nurse when the infection is ante partum. When the infection is recent or post partum, nursing should not be allowed. The benefit derived from breast feeding in children of syphilitic mothers is probably due to the antitoxine secreted in the milk and not the direct effect of the drugs themselves. Arsenic is thought to be secreted not at all or very slightly in the milk.

TREATMENT OF MORPHINISM.

Bishop believes in first training the patient by a preliminary treatment to determine the amount of drug required to maintain metabolism by his self-created needs. Most users are taking larger amounts than they need; any patient can be cut to his physiologic amount almost immediately if attention is paid to his elimination. A grain every four hours is a good average maximum, and with many the amount is still less. Elimination should go to adequate catharsis and not to the point of excessive purging. Lambert's treatment is a treatment of extreme elimination and rapid, but not sudden withdrawal, accompanied by the administration of belladonna to the point of full physiologic effect, estimating the periods of cathartic and drug administration on the basis of the average time required for cathartic action and morphin elimination in the chronic drug user. Bishop describes at length his method and his modifications of the Lambert treatment. He employs continued doses of calomel, one-half grain every two, three or four hours during a whole or part of the treatment, aiding occasionally by castor oil and salines. The treatment should be individual, as individuals vary as to their reaction to the drug, and the doses and intervals should be adapted to the patient's requirement. The stools are not, in his opinion, a reliable index of elimination. Indications for cutting treatment are found in the condition of the patient; after a certain period he is apt to become restless and feel sick at his stomach, but does not want morphin for relief. Bishop believes this indicates the final morphin elimination, and he gives heavy catharsis and cuts treatment. After this the patient generally sleeps, but if not may be given a hypnotic. During treatment, overloading of the stomach is disastrous, and careful regulation during convalescence is very important, as the patients are apt to be ravenous and indiscreet. The complications of treatment and convalescence are described in some detail. The importance of competent nursing is emphasized. Prognosis as regards permanent cure must always be guarded. In cases starting innocently and ignorantly in otherwise normal individuals, after the addiction is removed and the patients remain in good environments, relapses will probably not occur.

THE SICK ROOM.

MEDICAL NURSING—LECTURE No 8.

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Pyelitis.

THIS inflammatory process affecting the kidneys at times involves only the pelvis of the kidney, the so-called outlet of the kidney, and we have to deal with the inflammation which at times is a continuation of the inflammatory process which started below in the urinary organs, a continuation of urethritis or cystitis, cases to which we give the name of ascending pyelitis.

Other cases are of a hematogenous origin from the blood, where the inflammation is caused by microbes, the so-called infectious pyelitis. In these cases pyelitis is one of the symptoms of a general infection of pyemia. In other cases the cause is purely mechanical. The formation of stone or gravel in the pelvis of the kidney or pressure of the tumor around the root of the kidney may produce a secondary pyelitis. In acute cases we have fever, chills, lumbar pains, frequency of urination. The urine is milky in appearance, due to the presence of pus and excessive mucus, acid or neutral in reaction, and on standing leaves a very copious sediment, whitish or yellowish white in color, consisting of almost pure pus. When the pyelitis is due to stone, the urine contains blood, at times in large quantities, almost a hemorrhage from the kidneys, due to the mechanical irritations caused by the stone and erosions produced by same.

In calculus pyelitis, the pain is more severe than in cases of catarrhal or pussy pyelitis. The pain has a paroxysmal character, occurring in the form of attacks due to the migration and passage of the stone through the small lumen of the ureter or to the obstruction of the kidney end of the ureter and followed by retention of urine and distension of the pelvis of the kidney. The general symptoms accompanying the course of a pyelitis are at times severe, due to the absorption of toxines, resembling the clinical picture of general pyemia. When the inflammation pressure extends beyond the membrane of the pelvis it involves the surrounding tissues, resulting in formation of an abscess around the kidney, so-called peri-nephritis. A simple catarrhal pyelitis where the inflammation is mild subsides in a week or so. In cases where there is an obstruction to the flow of pus the prognosis is grave.

Treatment.

The treatment for acute cases consists in placing the patient in bed, on a strict milk diet, forcing large quantities of water with a view of increasing the flow of urine and dilute same, applying here the surgical principle of washing and cleansing a wound.

As to drugs, we prescribe what we call urinary antiseptics — drugs which are excreted by the kidneys and have a local action on the inflamed membrane. To this group belong urotropin, benzoic acid and its compounds. Ethereal oils, like oleum santolis, oleum copaiba, oleum eucalypti, are frequently prescribed; they have not only a soothing effect on the inflamed membrane, but also act somewhat antiseptically.

Of course, calculi causing the pyelitis must be removed by surgical means. We have no drugs to dissolve them and they can pass the ureter only when they are quite small, being carried away with the increased flow of urine. Surgery is called upon when there is an obstruction of the ureter with the following hydro- or pyo-nephritis, and also in cases of an abscess around the kidney.

All diseases of the kidney, acute and chronic, during their course, at times develop a group of nervous symptoms called uremia. As the word indicates, it is poisoning of the blood by material supposed to be urea, which has not been excreted in sufficient quantities by the kidneys. It is the result of a retention, an accumulation of these waste products in the blood, and thus manifests itself in an acute or chronic form. The acute form develops suddenly without any prodromal symptoms in a form of epileptic attacks of convulsions with loss of consciousness. The convulsions may consist of one severe paroxysm or a succession of fits following one another at intervals of a few minutes or several hours, the patient being conscious, or what is more frequent, in a more or less profound insensibility during the intervals. The fits are very similar to the epileptic ones. Temperature frequently rises to 103 or more degrees, the pulse is rapid, bounding, respiration quickened. The attack is followed by a more or less profound coma, from which the patient never recovers, or the patient regains consciousness and gradually recovers his usual health. Uremia does not always present the picture described above. We do not always have convulsions. The patient experiences attacks only of vertigo, pallor of face, nausea and vomiting, temperature is elevated, pulse is tense and rapid, respirations quickened; the urine is scanty, of a low gravity. These forms of uremia if not promptly relieved terminate in convulsions. The toxemia in these cases seem not to be so grave and yields to proper treatment.

The prognosis in acute uremia is always a very grave one, depending on the amount of retained poisoning and the severity and number of the attacks and on the condition of organs of elimination. If there is enough functionary power left in the kidney, our therapeutic measures may be crowned with success. The treatment of uremia has to be prompt and energetic. The mildest forms require early recognition and thorough appreciation of their gravity. The main object of treatment consists in a rapid elimination of the retained waste products, and in these cases we call into play all the channels which we can put into service; whereas uremia develops only in cases where the functions of the kidney are below par. Where they are very much impaired we can not rely on these disordered organs to eliminate the retained poisons and we direct our attention chiefly to the bowels, causing prompt and thorough active elimination by ordering large doses of magnesium sulphate, castor oil, croton oil, to produce numerous fluid evacuations.

Next to the bowels the skin is put into play and by hot packs we try to induce profuse perspiration, which also helps to eliminate some of the retained material. Of course, the attack itself, the convulsions, need immediate and prompt relief which is best given by a hypodermic of one-quarter of a grain of morphia, alone or in combination with inhalations of chloroform, during the attack. Both tend to relieve the convulsive contraction of the muscles, to reduce the blood pressure and to prevent possible rupture of the diseased blood vessels, a condition we usually meet in chronic disorders of the kidney with the dangerous consequences of such a rupture if it occurs in the vessels of the brain.

As soon as the convulsive stage is over, the acute condition subsides; we try to stimulate the activity of the kidneys by cupping the lumbar region, making hot applications to same, or by giving high rectal irrigations of large amounts of hot water, plain or of a normal salt solution, to stimulate the kidneys to action. With the increased flow of urine the danger of recurrence of convulsions is lessened. Diuretics may be tried, but they are not to be relied upon because we can not assure ourselves of the amount of active tissue still left in the kidney, and all these diuretics are efficient

only when there is enough granular tissue left which is able to secrete. Still, on the assumption that not everything is gone, we prescribe diuretics such as digitalis, better in the form of infusion, and nitroglycerin; the latter is given to counteract the increase of blood pressure produced by the first drug, and also to reduce the increased blood pressure, which by itself is one of the symptoms of chronic kidney disease.

As to the diet and other therapeutic measures in uremia, they are the same as in cases of nephritis, which is the cause of uremia, so they cover one another. The only difference is that while in a chronic nephritis our treatment is extended over a period of months and years, in uremia, the condition is so grave and so acute that there is no time to be lost, and only prompt and energetic measures skilfully applied may give hope to bring the patient to a condition to receive the treatment for his chronic disease.

Diseases of the Respiratory Organs.

Acute rhinitis or acute coryza, cold in the head, is not such a serious illness that your services will be called upon, even among the wealthy, but you ought to be familiar with the characteristics of this disease. It is an acute catarrhal inflammation of the mucous membrane lining the nose and the cavities communicating with it. It is usually preceded by a feeling of weariness, more or less frontal headache, followed by irregular, chilly sensations in the back, more or less fever, pain all over the body, and an uncomfortable feeling of dryness in the nares with a strong inclination to sneeze. This period of dryness is soon followed by an excessive secretion of a watery and acrid discharge, which is continually dripping from the nostrils. The accumulation of this discharge is causing attacks of sneezing, which temporarily relieves the swollen and congested mucous membrane. The relief is only temporary, fullness of the head and the difficult nasal respiration rapidly recurring. All of you, I suppose, have been once or more often victims of this disease, and my graphical description can hardly substitute your personal feeling. The disease itself not being dangerous, still calls for our consideration, particularly in infants, nurslings, where the breathing through the nose is difficult during the acute stage of this disease. Acute coryza interferes greatly with the feedings. They are not able to hold the nipple or the bottle. The simple cold in the head is at times followed by complications like irritation and swelling of the upper lip from the constant blowing of the nose and from the contact with the irritating nasal discharges. The inflammation frequently spreads to the neighboring cavities like the antrum of Highmore, causing pain in the cheeks or involves the eustachian tube leading to the middle ear. The inflammatory swelling and obstruction of the nasal opening of the eustachian tube is the pain experienced while blowing the nose. The sinuses, more frequently the frontal, becoming involved, cause severe frontal headache. The treatment of acute coryza consists first in constitutional measures.

Treatment.

To relieve the general symptoms we place the patient in bed, giving him a mild laxative and a dose of quinine. Quinine and whiskey is a common remedy, but it shall be taken as quinine and whiskey and not whiskey and quinine. Locally an application of solution of cocaine, or a combination of cocaine and adrenalin, give immediate relief. Different snuffs can be used for the same purpose. They all contain some cocaine in combination with bismuth or boric acid or acacia. Hamamelis with hazel, snuffed up, gives prompt relief.

One form of nasal catarrh deserves special mention. It is the autumn catarrh, the so-called hay fever. It is a specific affection of the upper air passages due to the action of certain grasses

and plants upon the hypersensitive mucous membrane. It is quite prevalent in the United States; it is usually met in the latter part of August and beginning of September. The disposition to the disease is hereditary. We may follow up the affection for generations. Women are more subject to it than men, and young and middle-aged persons are most often affected. The educated and highly nervous are more susceptible.

While there are different theories advanced as to the etiology of this affection the investigations of Dunbar place the etiology on a scientific basis. He has shown that there is but one cause: the pollen of grasses and certain plants, of which the pollen of rye is the most active. The severity of hay fever attacks is in direct proportion to the quantity of pollen present in the atmosphere. Dunbar has succeeded in isolating a peculiar poison of an albuminous nature from the pollen. It is so powerful that the minutest dose excites irritation of the conjunctiva on a susceptible subject, while it is absolutely without effect on normal persons. In the majority of cases the symptoms of hay fever are similar to a plain cold in the head. However, there is more headache and distress and more sneezing, which at times is very distressing and annoying. This is frequently followed by a cough of a dry, irritating nature, and if the irritation involves the bronchial tubes, the patient gets attacks of bronchial asthma.

Treatment.

As to the treatment, first we direct remedies to improve the stability of the nervous system. We give so-called nerve tonics like arsenic, phosphorus and strychnine to lower the susceptibility of the nervous system. Second, residents of the agricultural districts avoid the attacks by a change to another climate. Going to the Adirondacks or White Mountains almost insures immunity, although some cases improve at the seashore. Locally, adrenalin and cocaine thoroughly applied to the mucous membrane through the nose is one of the best remedies, and last, the specific serum discovered by Dunbar from the animals inoculated by the poison of the pollen. This serum being applied to the eyes and nose has given excellent results in suitable cases.

* * *

A FAMILY MEDICINE CABINET.

Leonard K. Hirshberg, in the *New York Medical Journal,* recalls that, not so many years ago, the family circle that failed to boast of its chamomile, sage, dandelion, and sassafras outfit, not to forget its molasses, sulphur, linseed oil, arnica and laudanum, camphorated liniment, asafetida bags, and mullein leave talisman, was a heathenish home indeed. But no more; today the up-to-the-second household, with its sanitary bathrooms, its flush plumbing, its micrometer-meshed, anti-mosquito and anti-fly wire screens, its undraped and uncarpeted smooth wood floors, painted, non-papered walls, automatically ventilated and sunned rooms, as well as its steam and hot-water heating arrangements, knows no more the dirty flaxseed poultice or the merry, germ-ridden feather duster.

What with vacuum sweepers and aseptic water bags, with the one-minute water heaters and sterilizers, the aseptic laundries, and marble tiled bathrooms, a new era has been entered upon by the family medicine chest. In families of the average sort, with no money to spare and two or more children to rear, such a chest can not be equipped too completely. For if there be ninety and nine articles in it, the emergency will appear in the dead of some dreary night, and another disaster of titanic proportions may threaten.

One of the foremost necessities in our medicine chest must be a list of printed first-aid directions. These should preferably be obtained from your own family physician. In such a brief article as this, it would be out of place to suggest first-aid directions. The next requisite

is paregoric, with stringent directions as to dose for children under one year. Then follow syrup of ipecac to allay the fears of parents as much as to loosen the mucus of supposed croup; a gargle or mouth wash, such as boric acid, compound tincture of benzoin, or one of popular market articles, a soothing antiparasitic salve, proprietary, perhaps, if the composition is known; wintergreen and olive oil; ammoniated soap, or camphor liniment for contusions, sprains or localized swellings until the doctor arrives; vessels containing mustard; the latter with others holding vinegar, as valuable as alcohol in allaying mild fevers by external application; and pepper should be kept handy in the medicine chest, away from the kitchen cupboard.

Alcohol, whiskey, hydrogen peroxide, and glycerin all play modern rôles in the domestic drama of health and strength. Goose oil—"goose grease," as many people call it—petrolatum, turpentine, and tincture of iodine are domestic counter-irritants and subsequent applications. Independent of the well-advertised douche powders and mucous membrane antiseptics, a teaspoonful of alum, potassium chlorate and phenol to the quart of water may be safely kept in the chest, in a fruit jar properly labeled.

A bit of essence of peppermint for colic, sodium bicarbonate, Epsom salts, a good vegetable pill for constipation, calomel, olive oil, and sulphur have their uses. Dusting powders, bismuth, magnesia, talc, or other mild mixture, as well as witch hazel, lead and opium water, and zinc ointment, should be available for instant use. Antiseptic tablets or powders, such as bichloride of mercury or potassium permanganate, should either be packed in some unusual way or, to avoid accidents, be replaced by boric, benzoic or zinc sulphate antiseptics.

Sticks of alum or potassium caustics may be dispensed with, for they are not absolutely sterile, but atomizers containing combinations of menthol, camphor, or similar essential oils, should be at hand to spray noses, throats and cuts. Collodion or liquid court plaster, adhesive plaster, capsicum plasters, and liberal amounts of sterile absorbent cotton, gauze bandages, and one of the antiseptic clay poultice preparations, will stave off much trouble. Aromatic spirit of ammonia, starch, and smelling salts, not to speak of enema and douche bags, are always found in the chest. Lime water, milk of magnesia, sugar of milk, cream of tartar, tartar emetic, castor oil, and tincture of iron, may be as necessary as antidotes as they are therapeutically useful.

The question of whether such usual drugs as quinine, Hoffmann's anodyne, senna, cascara, or spirit of nitre should be continued in the family medicine chest, is now a matter for each physician to decide for each familly. No good can be furthered in some cases, in others they should be within immediate reach. Much the same criticism may be made of any suggestions, it is true. Still, there can be no disagreement over the importance of having simple alleviating mixtures for acute eye, ear, stomach, throat, and skin affections. Bandages, dressings, clinical thermometers, plasters, picric acid for burns, lint, pyrethrum powder for flies and mosquitoes, all tend to help the family, while by no means limiting the necessity for or the activity of the family physician.

OXALURIA.

The following has been found useful where there is anemia and nervous atony:

Acidi hydrochloridi dil	fl ʒss
Tr. ferri chloridi	fl ʒij
Syr. simplicis	fl ʒijss
Aquæ	ad fl ʒviij

M. Sig.: Tablespoonful three times a day through a glass tube.

THE DOCTOR HIMSELF.

MEDICAL ECONOMICS.

JAMES P. WARBOSSE laments that in medical practice there is dreadful waste of talent. There is no means for selecting and appointing to be a surgeon the man best qualified for surgery. It is largely a matter of chance. The result is that men who should be alienists are surgeons, and men with wonderful natural aptitude for surgery are general practitioners.

The socialization of medicine does not mean that there shall be no private practitioners. Undoubtedly there will be, just as there will be private business enterprises in fields which do not involve the necessities of life, or which spring up because of individual preference or expression. But whatever springs up outside the State, if it is desirable for all of the people, will find itself shortly taken over by the public. A physician of some special talent or anarchistic taste may prefer to withhold himself from the State and stand alone. Patients should continue to have the privilege of delivering themselves into the hands of private enterprises, just as now, if they so desire.

Quackery is one of the results of our competitive system. The patent medicine business depends upon advertising. Competition compels the newspapers to collusion with this class of crime. Self-medication and the resort to quackery are encouraged as business enterprises by all the powers of business, as well as by the economic necessities of the patients. Give the working man the privileges of competent medical advice without cost, precede this by the education that is now denied him, and he will spend little money on quackery. Even though he might be inclined to, there should be no quackery for him to patronize. In a country socialized in the interest of the people, and the god of business profits cast down from its throne, a league for the freedom of quackery could not exist.

The socialization of the care of the public health is not going to check scientific competition. It is going to stimulate it. The greatest scientific advancements in medicine are not now coming from the field of the commercial struggle for existence occupied by the medical practitioner. They are coming from the men who, by public or private means, have been removed from its blighting influence. The financial reward has not been the object which has stimulated the great medical discoveries. Now it is well recognized that the doctor who is engaged in the competitive struggle for a livelihood is the least apt to contribute to the progress of science. Surgery is the last exception, but it is rapidly becoming commercialized, and soon its best progress will depend upon the financially independent workers.

Institutions endowed by private means or supported by the State, institutions removed from the field of business competition by virtue of the extraordinary talents of their workers, and branches of the Government maintaining medical departments are the sources to which we now look for the best advancement of medical science.

Servetus and Harvey were not spurred on to the discovery of the circulation of the blood by the expectation of profits. One was burned at the stake and the other was mobbed for his pains. Read the life of Pasteur, the founder of bacteriology and the science of infections, and see how utterly free from the glimmer of gold is the work of this great man. Yellow fever, malaria, typhoid, tuberculosis, hook-worm disease, sleeping sickness and rabies have had their secrets discovered and the possibility of their

mastery demonstrated by scientific men competing not for profit but for service. That the "curse of gold" appeared in the development of anesthesia is the one stigma upon this great boon; but had the dirty question of profit never entered, we should have had anesthesia just as soon.

The whole history of medicine, with its splendid list of martyrs, is a glorious refutation of the sophistry that competition for profit is important to human progress. The competitive system, which surrounds and harasses medical advancement, hindered it from the beginning, and retards it still.

When humanity throws off the burden of competition for the necessities of life; when the distribution of wealth is regulated by the desserts and needs of the people; when human life and happiness shall be the object of solicitude of the State; the profession of medicine will take its place as the great conserver of the most precious of the nation's natural resources.

The matter with the medical profession is that the doctor is a private tradesman engaged in a competitive business for profit. He should be a public servant. His importance to the people and the value to the nation of their physical well-being demand it, and some day will receive it.

THE ANCIENT PROFESSION OF DENTISTRY.

It is commonly supposed, says the *London Globe,* that until the advances made in medical knowledge in comparatively recent times drew attention to the importance of preserving our "set of teeth," no particular attention was paid to them by the ancients or by our forefathers. The popular belief is that a rough and ready extraction of the offending "tusk," either with pincers or by means of our childhood's remedy, a thread and a bedpost, constituted the sum total of knowledge and skill available for their care. But this is a fallacy. The father of history, Herodotus, tells us (Book II) that the Egyptians had physicians "for the diseases of the teeth." The writings of Hippocrates and Galen contain reference to the subject of the care of the teeth.

A remarkable passage quoted by Cicero from "Twelve Tables, or Ancient Laws of Rome," states that the tables enacted that no gold should be buried with the dead, but that it was permissible to bury without removing the gold those who "eat with their teeth joined with gold." This allusion is probably to the practice of steadying loose teeth by attaching them to their firmer neighbors with gold wire or ribbon. Martial, the satirist, alludes to the use of toothpicks of wood or quill, tooth pastes, powder and washes, and to the practice of the Roman women of supplying the deficiencies of nature with false teeth, which he calls "bought teeth," made of "Indian horn," *i. e.,* ivory.

At about the middle of the first century of the Christian Era Aurelius Cornelius Celsus, in his treatise on medicine and surgery, has many and sound prescriptions for the cure of teeth and toothache. He goes wrong, however, when he recommends a mustard plaster on the shoulder to cure an aching upper tooth and a mustard plaster on the chest to cure a lower tooth. Henbane, wine, salt, poppyheads, vinegar, alum and galls, myrrh, roseleaves and cinquefoil figure in his prescriptions. He is somewhat scornful of a remedy "discovered by rustics," which consists of throwing red-hot flints into a basin of water for the patient to get relief by inhaling the steam.

For tooth-drawing there seem to have been four different instruments used, and if the tooth was decayed the cavity, before extraction, was to be filled with lead, in case the tooth was broken in pulling it out. From this it is a short step to stopping or filling the tooth to prevent further decay, which in early dentistry was usually done with lead.

The nostrums of our Saxon ancestors read crudely after this. In "Leechdoms, Wortcunning and Starcraft," the cause of decay of the teeth is given thus: "Often the worst humor comes to the teeth from the head in such a manner as (water) droppeth off a house onto a stone, and drilleth through the stone. Similarly, the moisture of the head above falleth upon the teeth and then pierceth through them." Remedies for toothache, to be mixed with warm water or wine, include henbane, laurel berries, nightshade, chevril, asparagus, spearmint and marigold.

In the twelfth and thirteenth centuries the teaching of surgery began to be organized in Western Europe. Surgery including dentistry, was practised by guilds of surgeons or barbers. The records of the City of London for the fourteenth century contain references to dentistry. The annals of the barber-surgeons of London, York and Norwich also contain references.

In 1462, Edward III granted a charter to the Barbers' Company (still preserved), and it alludes to "our beloved, honest and free-men of the Mystery of Barbers of our City of London—drawing the teeth of our liege men."

In 1541 was passed the Statute 32, Henry VIII, c. 42, which forbade barbers to practice surgery "except drawing of teeth," which they continued to practice along with their own proper business. Thomas Vicary, in the "Anatomie of the Body of Man," quaintly remarks that the number of teeth is uncertain, "for some men have more and some less."

The annals of the Barber-Surgeons' Company inform us that in 1551 John Bryckett, a tooth drawer, was admitted and paid £1, and in 1557 Mrs. Dawson, the widow of Bryckett, was forbidden to hang out a sign or cloth with teeth as she had hitherto done. In the same year a license was granted William Thomlyn "to draw teeth and make clean teeth, and no more, and he paid 10 shillings and promised to bring another 10 shillings as soon as he could." A fine of 40 shillings was imposed for making clean teeth with any instrument on Sunday.

In the seventeenth century begin the writings of the French dentists, who have given their name (Dentiste) to the modern practitioner.. In 1633 Dupont published his "Remède contre le mal de dents." In 1687 Charles Allen published his "Curious Observations in that part of Chirurgery relating to the Teeth."

Favchard wrote in 1728, and throughout the eighteenth century onwards there is a copious literature on the subject leading up to the treatises of the modern practitioner, with his anesthetics, antiseptics and electrical appliances. The introduction of the term "dentist" was not at first favorably received, since a writer in *The Edinborough Chronicle,* in 1759, sarcastically remarks: "Dentist figures it now in our newspapers, and may do well enough for a French puffer, but we fancy Rutter is content with being called a tooth drawer."

The dentist is one further illustration, if any be needed, that there is nothing new under the sun.

♣ ♣ ♣

REMUNERATION OF PHYSICIANS.

Josh Billings advises the young doctor to ignore the disease and treat the patient, says Irwin in the *Therapeutic Gazette.* Do not our "experienced" and "tactful" M. D.'s who keep up the "bluff" of a large office business—doing but little charging and in some instances causing the sick whom they visit to have one or more of the neighbors call at the office at a particular time to daily report progress—follow such advice? In this and in other ways, such as cases from their free clinics, do they supply their office with "stool pigeons," and flim-flam the laity into thinking they have a large office business and must necessarily be "able" physicians. It is told of one of our physicians here, of years of practice, who is a good "mixer and joiner," that he regularly gives his many friends

"auto rides" during which he makes fifty or more "stops," leaving the impression of having a "wonderful" practice; and of another surgeon who tells his acquaintances all about his many and "great" operations.

Nor is the average busy physician either fair to himself or to his patient. Instead of scheming to keep his office filled at any cost, he should aim to limit the number of his cases; and thereby give those who do consult him value for the money which they pay him, and at the same time guard his own hours of refreshment and sleep. As physicians we know too well that the follies of youth are promissory notes which begin to fall due about thirty years after date. Just as true is it that an overworked physician will too soon lose his health. Of the prominent Detroit physicians in active practice in 1900, more than 25% have since died. Medical practitioners are, as a class, more subject to illness than are their fellow men. The combined influence of anxieties which weigh on them in the amount and nature of their work, irregularity of meals and broken sleep, exposure to weather and infection—all these are sufficient to break the strongest constitution; hence they should insist on being first to be paid for their services instead of last, as is too often the case at present.

Is it too much to expect that the day may soon come when the very "busy" man whether he be doctor or lawyer will be passed by for the good reason that he undertakes too much not to neglect those who have a right to receive value from him? It is but natural to expect to be neglected by any doctor or lawyer whom one employs who is doing too much work in each twenty-four hours.

That the "ethical" physicians of reputation themselves are not entirely fair, take for example the matter of their interviews in daily papers and of advertising. We say that to buy space and advertise in a daily paper is unethical, and yet we allow and too often request newspaper reporters to be present at and take notes in our society meetings, annual clinics and conventions, and receive a free write-up in all the local newspapers—then, by mailing broadcast our reprints of papers read at said meetings we finish the "ethical graft." Are we not less consistent here than he who pays his money to the newspaper for space and whom we designate as a "quack?" Let us then in all our work call a spade a spade, and apply the golden rule. There will then be fewer and better colleges, fewer and better physicians, and best of all, when we are paid for what we do, a chance to make an honest living from what at present is an over-"done" profession.

In every large city there are already city physicians, free dispensaries, college and hospital clinics, for the poor, and it is an economical error for any physician to sacrifice himself in building up an unremunerative practice. He has to neglect his own health and to forego the reading he should do to keep himself up to date; and he can not give the attention to any of his patients that they deserve. Colleges are grinding out physicians faster than they are needed, or can make a living for themselves, as it is. The so-called "busy" doctors make slaves of themselves in most cases to keep up the "show" and are worn out too early in life. From the patients, even those who are able to pay and do not, the doctor only finally receives ingratitude. We must teach patients that we get our living by our calling, and that all must pay promptly except such honest indigents as we ourselves select to treat free.

We who believe with John S. Billings, M. D., that medicine is not a rigid system of rules and formulas, as it was in ancient Egypt—a fixed creed to which we are to subscribe and from which we

must not vary; but a living, growing thing making use of every resource which the progress of science brings, testing all things and holding fast to that which is good—we who believe this should not hesitate to require the just compensation for our labor which will be a fair return for our large financial investment in years of college training, study and experience.

Oliver Wendell Holmes, M. D., said.

Could Youth but know what Age doth crave
Many's the penny Youth would save.

So with the wise physician: let him not by the poetry or imaginative flight of the "extremist" in medical ethics strive to die for the physical sins of the people, but rather to so regulate his financial affairs that when old age comes on him he will have, then, something with which to meet his needs more substantial than the so-called gratitude of the people whose physical and mental distress and heartache he relieved without money or price.

I suggest that lists of "dead beats" or "deliberate grafters" and "delinquents" be filed with the secretary of every county medical society throughout the country; and that the said lists be revised every three months—same to become a book of reference for use of members. Let us have fewer patients and better fees; those who have not approved credit to pay cash at each house visit or office consultation; statements on good accounts to be rendered monthly; and payment required before the 10th of the month following.

The American, State and county medical societies should at once take up the subject and get a practical remedy, giving our members some return for "annual dues" beyond scientific papers and discussions for the "good of humanity," while too many of our members who depend wholly on their practice for a living are all but "starving to death."

THE TRUE AND BEAUTIFUL.

The editor of the *Medical Standard* quotes the Rubyiat:

A hair perhaps divides the False and True;
Yes; and a single Alif were the clue—
Could you but find it—to the Treasure-house,
And peradventure to the Master, too.

What an elusive thing truth is. How difficult it is to determine exactly what is right and what is wrong. I am optimist enough to believe that the majority of men prefer to be on the right side, wish to avoid error, desire to be brave, and in their hearts, at least in its innermost chambers, reverence what Matthew Arnold once called "the good, the true and the beautiful." But the truth is not so easily defined. It is as changeable as the chamelion—constantly shifting with circumstances, environment, knowledge and time. We speak of great moral truths—but can we reduce them to rules or crystallize them into principles? Perhaps—but even that may be questioned. The great "Truths" of the past, for which so many of our heroes and martyrs fought, and bled and died, are many of them today but out-grown superstitions. "Where are the snows of yesterday?" sang Villon. "Where are the truths of yesterday?" we might paraphrase; and the answer would be—"Gone like the snows."

* * *

"The good, the true and the beautiful" mean quite different things to the African savage from what they mean to the Chinese mandarin; the mandarin looks upon life, and upon moral obligations, quite differently from the way in which we do. The great virtues of the Japanese samurai would not seem logical or compatible with the highest concepts of honor to a New York merchant. The moral teaching and the theologic dogmas of two or three hundred years ago—even of fifty years ago—seem inconsistent and horrible to us now; while the modern philosophies, the great ethical movements

that are molding modern thought, would have seemed to our grandfathers as unutterly dangerous—leading their devotees down to the very mouth of the Pit. We can hardly conceive of the horror excited in the masses a hundred and fifty years ago by the writings of Tom Paine, for today they are platitudes, which receive the unqualified indorsement of nine out of ten men on the street.

* * *

With the introduction of the evolutionary idea into the world there came a shifting of our moral concepts—at first insidious, and condemned; then tacitly acknowledged, though still looked at askant; finally accepted openly by practically all broad-minded men—taught in the universities—preached in churches —made the basis upon which the great structure of science is going up. But for a while at least—perhaps even until today—we were left without a moral foundation. Truth had shifted, and we have found it difficult to shift with it. The "hair" that divides the false and true had grown into a wall, and with all our multiplying sects, cults, faiths, schools, schisms, parties and beliefs, not one single material Alif can we find to guide us through the maze beyond into the Treasure-house. And so we have lost hold of the spiritual.

* * *

KEEPING COOL IN SUMMER.

The *Medical Council* declares that keeping cool and comfortable is not wholly a state of mind, but mental relaxation or stimulation has a vast deal to do with it. "Gird up your loins and be a man" is a biblical text upon which a sermon might be preached dealing with hot-weather hygiene. The loosely clad and barefoot negro is lazy, and the white man soon becomes so if similarly dressed. In India and other hot countries it is the general experience that the scrotum of men and the breasts of women must be supported in order that the body be comfortable in hot weather. The average American woman insists that the support of a light corset is comfortable in the summer time, not only for the bust, but also for the abdomen, and she is right in her contention. A stout pair of shoes make a different man of a laggard. The well-shod soldier has a courage the barefoot horde wholly lack. Dress is a positive protection against great heat. Protect the head and back of the neck, the loins and the feet; support the abdomen, scrotum and bust; shield the head and the spine from the sun; let the rest of the body be very thinly clad. From this it will be observed that women dress more rationally in summer than do the men. The least hygienic feature of woman's dress is the unventilated skirt, holding heat like a balloon and catching dust from the street. And the ladies will work that problem out ere long.

To be comfortable in July, rise early in the morning, breakfast, get to work, eat a light luncheon at 11 a. m., and stay indoors at rest, asleep, or at light employment until 4 p. m., bathe, dine, and get to work again. Do not retire until the night cools somewhat. Dividing both the working hours and sleeping hours into two shifts, as they do in the tropics, is a sensible rule we may well adopt in the summer months.

Get the air in your house as dry as possible. A hot and clammy house is worse than a prison. It were well could we fill up our cellars every summer; at best, cellars are insanitary in summer. Let the heat of the house out at the top. Fortunate is the family living in a house with the old-fashioned garret with windows in it. Do not darken the house except during the heat of the day. An alum screen will let in light and exclude the heat. Put up porches or awnings and open the windows under them. Arrange sleeping porches. Do not be afraid of night air.

REFRACTION.

SPASM OF THE ACCOMMODATION.

By Dr. Marbaix, in the *Revue Francaise d'Optique.*

(Translated by *The Official Journal and Review.*)

WHEN we read the authorities we are astonished by the little importance conceded to spasms of the accommodation.

Fuchs' work, for instance, gives to the subject only a very short notice. The French Encyclopedia has a study of the subject, but scattered under various headings, when it would be more suitable to have them all in one complete monograph. Also in clinics very little is heard of this subject, doubtless because spasm of the accommodation is found mainly in office practice.

Having had the opportunity of seeing many children of the middle classes during their school life, this subject has interested me for a long time, and as there are others who have done excellent work in it, I believe it will be interesting to recall attention to it anew.

There are several varieties of spasm, each one of which presents a special aspect, which I shall endeavor to sketch.

Case 1—The case which is most frequent is that of the child who comes with a complaint as follows: "Difficulty in seeing, especially by gaslight, necessitating coming closer and closer to the book. Various asthenopic difficulties gradually become worse and worse through several weeks."

Visual acuity is normal. Reading of No. 4 letters, according to the metric scale of Wecker and Masselon, takes place at 20 centimeters, but no further away; reading No. 1 is impossible. While reading the book is often brought as close as 7 centimeters, with 0.75 D. placed before the eyes reading at 33 centimeters becomes easy. The skiascope indicates emmetropia.

Case 2—The patient complains of trouble in near vision, sometimes for two weeks previously, but often for several months. Usually there is a considerable reduction in visual acuity for the distance test types at five meters. Various symptoms permit a diagnosis of spasm:

(a) Disagreement between a slight reduction in visual acuity for distance and the excessively close distance for near vision.

(b) Disagreement between a greatly decreased visual acuity, as, for instance, 1/10, and full correction made with a weak minus line—0.50 D. or —1 D.

(c) Gradual reduction of a high degree of myopia needing at times for first correction —5 D. to —8 D., and which falls during test to zero, or nearly so, by the method of Dr. Leplat. This method consists in placing before the concave correcting lens a plus 0.25 D., which will reduce the myopic correction by a quarter of a diopter without decreasing the visual acuity. For this is substituted stronger plus lenses until emmetropia, or close thereto, is reached. This method is so important that it should never be omitted every time a minus lens is apparently called for.

(d) Skiascopy indicates emmetropia, or a myopia much less than the myopia found subjectively.

(e) The test in the dark room is often sufficient to relax the spasm, so that in re-examining the subject the acuity is found to have gone up to normal.

Case 3—The patient has been wearing concave glasses for several years, yet the gradual reduction of the power of the glasses by the method above described reduces the spasm, and skiascopy indicates emmetropia, hypermetropia or low myopia.

Case 4—The subject may or may not wear glasses. The myopia found subjectively persists; the skiascope shows myopia, but there is a reduction as the result of wearing plus lenses, when astigmatism may develop.

Case 5—The spasm is complicated with convergent strabismus with or without diplopia.

Case 6—The spasm of accommodation is at times monocular. I have often noticed such cases, where there was myopia in one eye, and the spasm of the other eye tended to equalize the refraction, and therefore was an effort of nature to suppress the anisometropia. Rest of the eyes in such cases tends to bring relief.

Case 7—The subject is hypermetropic, or has hypermetropic astigmatism. For the distance visual acuity is improved by a plus lens; for near vision the print is brought excessively near.

Case 8—Spasms of the accommodation accompanied by hysterical symptoms, making the conditions serious and very persistent.

The coming on of the spasm of accommodation is often rather closely related to a general depression following grippe, anemia, etc. Excessive use of the eyes certainly plays a part, for I have often observed it among children who are great readers, where reading seemed to be a great passion, often hereditary. There have been under my care four children of the same family, great readers, even in bed, who all had spasm of the accommodation followed by a low degree of myopia some years later—the parents had no myopia.

Bad lighting and other defective conditions relative to ocular hygiene surely play a part. The winter season especially causes many of these spasmodic cases to come to the specialists.

One cause to which we do not perhaps pay enough attention is the method of writing by school children.

I do not think it is essential to always require the patient to bring samples of his handwriting, and yet I have noticed, especially in the middle grades of school, where the pupils are obliged to make charts, historical tables, geographical tables, etc., which must be kept in a small space, that it is usual to write in a very small hand, this finally leading to excessive demands on the eye, and notably to spasm of the accommodation.

The child of from eight to ten years who possesses an amplitude of the accommodation of more than 10 D. easily gets the habit of coming too close to the book, and some years later, when this amplitude of accommodation decreases, and inversely the studies becoming more important, the excessive school work reaches its higher limits, a bad habit has been formed; that is, of writing in minute characters which becomes a source of trouble for the accommodation.

I have in my possession a sample of handwriting of a young man of sixteen; he can only read at a distance of 18 or 20 centimeters. His copy books, for history, especially, contain numerous synoptical tables, of which the characters are often still finer. The result is that the young man has bad headaches, the result of a spasm of the accommodation. I believe, therefore, that we should see the copy books of the young myopes, or those with spasms of the accommodation who consult us, and to prescribe a change in their handwriting.

The physiology of spasm is known; it presents in some cases a resistance which requires on the part of both specialist and subject a great deal of tenacity.

The cases of chronic spasm are easily relieved when distant vision is little affected, by the wearing of a convex glass of low power and by general treatment by the family physician, especially after convalescence from diseases.

The handwriting should be corrected where it is too small or hard to read.

In tonic spasms which resist the above the use of atropine is needed. [Wearing plus lenses for a considerable time is best of all.—*R. M.*] In such cases astigmatism is often uncovered and the correction of this brings complete relief.

Usually the specialist is not sure as to the final result in spasm of the accommodation. Fuchs claims that, "unfortunately, the cramp frequently reappears." De Wecker and Landolt think that generally the spasm ceases with age.

I am inclined to believe that it does so disappear, when I recall the number of such spasms in patients from ten to twenty years of age, and the rareness of the condition after thirty years of age. Certainly some become myopes, as I have proved with certain patients whose cases I have followed for many years.

In any event, spasm of the accommodation is in every case the cause of much discomfort, and our attention should be especially aroused when a person of school age consults us with symptoms, particularly headaches, which have resisted the treatment of the family physician.

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DETECTION OF OPTICAL MALINGERING.

A. H. Andrews, in the *Journal of Ophthalmology and Oto-Laryngology*, gives the following tests:

1. A convex glass of 6 D. is placed before the sound eye. In this way the eye is made artificially myopic, so that its far point lies at a distance of about 17 cm. (it being presupposed that the eye is emmetropic). The eye can therefore read fine print only at a distance of 17 cm. or less, but no further. After placing the glass before the eye we first make the patient read at quite a short distance, and then slowly and imperceptibly move the book farther and farther away. If it is possible in this way to withdraw the book considerably farther than 17 cm. without the patient's ceasing to read, it proves that he has been reading with the eye alleged to be bad. That is, he began reading with the good eye, and when the book was carried too far off for that, continued with the other eye, without noticing the transfer of vision from the good to the alleged blind eye in the employment of the two eyes.—(Fuchs.)

2. We make a show of occupying ourselves with the sound eye only. We hold before the latter a prism in such a way that the refracting edge is horizontal and extends transversely across the middle of the pupil. In this case two images of every external object will be thrown upon the retina, one transmitted through the free half of the pupil and the other through the half covered by the prism, and the eye sees double the object upon which it has been fixed (monocular diplopia)—a fact which the patient will admit without hesitation, since, of course, it is the sound eye only that is concerned in the matter. Now the prism is imperceptibly pushed along until it covers the entire pupil. Now the eye that is provided with the prism again has only one single retinal image, which, however, is thrown upon a higher or lower point of the retina than is the case in the other eye. If now there is still double vision (binocular diplopia), it is a proof that both eyes see. If we use the reading test for this examination and compel the person under examination to read sometimes the upper, sometimes the lower of the two double images, we can determine directly the visual acuity of each eye separately without the patient being aware of it.—(Alfred Graefe.)

3. Place the cobalt glass in the trial frame before the sound eye and direct the individual to look at an incandescent globe and tell what he sees. He will be unable to analyze the light if he gets additional light in the opposite eye, so if he is malingering he will probably attempt to close the alleged blind eye or

he will insist that he sees nothing, while if he is not malingering he will say that the filament will appear white with a line of bright red on either side of it. If he is a few feet away the whole line of yellow light may appear red.

The simulation of visual impairment is much more difficult to detect than alleged blindness. The patient may have normal vision and still claim to have much or little impairment: or he may have some actual impairment and exaggerate the amount. This type of malingerer is best detected by increasing the impairment by the use of glasses. He will usually determine that he will not read below a certain line. When that line is found and recorded, put a glass before his eye, for instance a plus 1 D. and record what he reads, then add another plus 1 D. and record what he reads with the combination. Now add a minus 2 D., which neutralizes both the others, and see if he reads as he did before the glasses were put on. These tests can be varied indefinitely and continued until the malingerer is thoroughly confused. He can not establish a basis for comparison, nor can he remember what he claimed to be able to read if, after various changes are made, some of the earlier tests are repeated. The different plus and minus spheres can be used, and also the cylinders.

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TESTING FOR THE NEAR POINT.

The finding of the near point, and through this of the amplitude of the accommodation, is not usually an accurate test, for the smallest letters and words used in making the test are rarely less than 20-inch letters; that is, the normal eye can read the finest letters on the chart used at a distance of 20 inches or more. It is clear that such letters do not have the greatest value when testing it up 10 inches, or in the case of children at 4 or 5 inches. The result of using such letters is uncertainty as to the amplitude of accommodation of myopes and children. The best test types for getting the near point is a photographic print of the regular near chart. This should be made on a smooth-finish paper so that the picture may be as perfect as possible. By making a reduction to one-fourth size we would have a set of graded type from about 5-inch type up, and with this it would be possible to get the near point with an accuracy otherwise impossible. With the usual test charts the patient has to decide when he sees the words without blur, and we have to be content with his decision, but with a photographic reduction as here described we could depend more upon what he can prove he can do by actual reading than upon his judgment as to the presence of blurring. It may be asked why can not such small letters be printed on the ordinary near test charts. The answer is that such small type is not made, and if it was the paper of the charts has not a sufficiently close grain to show such small type very distinctly.

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THE THREE PUPIL REFLEXES.

When increased light enters the eye the pupil of that eye will contract; also the pupil of the other eye will contract. The first effect is the direct response to light; the second is the indirect, or consensual, effect. Finally. when the focus changes from an object far away to an object near by, there will be a contraction of the pupil. About the best and most convenient way to see all these reflexes is by means of the skiascope.

To see the direct pupil reflex for light. use the concave mirror held close enough so that the focus of the source of light falls on the cheek just below the pupil of the eye; let the patient look past the observer's head at the opposite wall. Next tilt the concave mirror slightly so that the light passes into the eye, and the contraction of the pupil will be decided and immediate.

To get the consensual reflex let the patient look past the observer's head to

the opposite wall, holding the plane mirror skiascope in one hand, till the mirror gets the reflex, and hold it steady; next holding the concave mirror in the other hand, tilt it until the image of the light framed by the mirror is on the patient's cheek just below the other eye. A slight movement of the hand will cause the light to enter the eye, when the reflex of the other eye, as seen through the slight hole of the plane mirror, will be seen to contract.

To get the reflex for accommodation, have the patient look past the observer's head at the opposite wall. Next, bring up the fingers of the free hand and have him look first at the finger, and then back again. Meantime with the plane mirror skiascope get and hold in a fixed position the reflex from one of the eyes. A slight contraction of pupil will be noticed as the patient turns his attention from the wall to the tip of the finger. The accommodative reflex having been detected in one eye, the other may be tested out in the same way.

Testing the pupil reflex for light is a test that should be followed as a matter of routine. It not only dissolves those very few cases where there is no reflex for light, but it also detects opacities, sluggish pupils, unduly wide pupils, and cases where the retina is supersensitive to light, but in making the test the patient need not look directly at the light.

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POSITION AND SIZE OF BLIND SPOT.

The position of the blind spot in emmetropic, or nearly emmetropic, eyes, has been investigated by Prof. Van der Hoeve, of Utrecht (*Arch für Aug.*), in 100 different cases, the object of the tests being to determine both size and position. The head of the person to be tested was fixed in a headrest at a distance of two meters from a large black surface having attached to its center a small bright fixation object. Then with small circles, white and colored, the limits of the blind spot were located, these limits being finally marked with white ink. Repeated tests were made, usually resulting in exactly the same limits.

In most of the eyes the blind spot formed an oval with the greatest axis vertical. Measurements were made of the horizontal and vertical distances from the center of the blind spot to the fixation point in cm. and degrees; also of the greatest horizontal distances for motion in cm. and degrees, the diameter of the blind spot in the horizontal meridian of the fixation point, the vertical diameter in cm. and degrees for motion and horizontal and vertical diameters fo red, white and blue.

The average measurements were: From fixing point to center of the blind spot horizontally, 15° 33′ 47″; vertically, 1° 40′ 41″; horizontal diameter, 5° 22′ 55″; vertical diameter, 7° 26′. These measures, reduced to linear values for the retina, yield for the horizontal distance from the center of the fovea to the center of the optic disc 4.1 or 4.5 mm.; vertical distance, 0.4425 mm.; width of optic disc, 1.6125 mm.; height of disc, 2.025 mm. Thus a horizontal diameter of the blind spot of 7° for motion is absolutely too high and one of over 6° is suspicious and requires repeated examinations.

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THE OPHTHALMOLOGY OF GENERAL PRACTICE.

By M. L. Hepburn, M. D., B. S. (Lond.).

(In the *Lancet*).

From the general practitioner's point of view, diseases of the eye may be divided into two groups: (1) External diseases, or defects which show some visible external signs; and (2) defects of sight, or diseases which show no visible external signs. These may be subdivided into: (*a*) Refractive errors, and (*b*) intra-ocular disease, or both.

External Diseases.

Conjunctiva—The general practitioner is expected to cure conjunctivitis, and in order to treat it effectually he must recognize one or two different types. The commonest form is where the whole eye is intensely injected, accompanied by a profuse mucopurulent discharge; this causes the lids to become glued together in the morning, which is one of the leading symptoms of this variety. Unless the cornea is secondarily affected, there is no photophobia, and the ordinary methods of cleanliness will in the course of a week or two bring about a cure. It is, however, advisable to use a lotion, either boric acid (gr. x to ʒ i.) or perchloride of mercury (1 in 5000), for washing out the eyes three times a day and to apply some boric ointment or vaseline along the edge of the lids at night to prevent them from sticking. I have frequently noticed that many practitioners in treating conjunctivitis omit to prescribe the ointment, whereas I think it is perhaps the most important part of the treatment. Whatever we apply to the eyes during the day, if the lids are closed at night for several hours, the organism remaining in the conjunctival sac will grow more quickly under such favorable conditions and continue to reinfect the conjunctiva each day, thus keeping up the inflammatory action for a much longer period than otherwise would be the case.

Another form of conjunctivitis that must be recognized is the angular, which persists for a very long time, and, unlike the last form, will not get well unless treated in the proper manner. It is an inflammation of the conjunctiva which is mostly confined to the outer and inner canthus extending over onto the skin at these points, some redness being also found along the edge of the lids. It is not accompanied by much discharge, though slight stickiness in the morning is usually complained of. Whatever lotion is used, sulphate of zinc (gr. i or ii to ʒi) must form one of the ingredients, otherwise no improvement will result; zinc is a specific for the organism found in this kind of conjunctivitis, and is the basis of all successful treatment.

From a busy practitioner's point of view most conjunctivitis cases may be classed in one or other of these categories, and an inflammation of the conjunctiva which appears to be getting chronic is often benefited by treatment with zinc. In any specially stubborn variety the lids may be everted and their conjunctival surfaces painted with protargol (20 or 30%), and if this is not successful with silver nitrate (gr. x to ʒi) applied by means of a cotton-wool swab on a glass rod. But occasionally much more severe forms of conjunctivitis will be brought to the medical man. Ophthalmia neonatorum or gonorrheal conjunctivitis is one of this kind, and is a special type of mucopurulent conjunctivitis due in the majority of cases to the presence of the gonoccoccus; it occurs usually in infants, though the same condition is found more rarely in adults. It is extremely dangerous, owing to the liability of the cornea to become quickly involved, when it often results in the loss of the eye. Now this fact is well known to the general practitioner, and he is therefore eager to make himself familiar with the proper form of treatment. He knows that 2% silver nitrate is the staple remedy, and he often becomes so overanxious that he applies this antiseptic with such vigor that sometimes it causes the very complications he has set himself to avoid. The proper line of treatment is to wash out the eye with perchloride of mercury (1 in 5000) or boric acid lotion every hour during the day, and every four hours during the night, steps being taken at the same time to cover up the other eye, if still unaffected, with a Buller's shield or some similar apparatus; the lids must be everted and painted once a day *only* with 2% silver nitrate by means of a swab of wool fixed on a

glass rod so long as there is copious purulent discharge and some ointment must be applied to the edges of the lids to prevent them sticking together. As soon as the discharge becomes distinctly less in amount it is better to employ weaker remedies, such as protargol for painting and a milder lotion; in this manner the effects of over-zealous treatment can be best avoided, and there is perhaps no class of case where a change of treatment is followed by more beneficial results. Every day the cornea must be carefully inspected, the lids being kept apart, if necessary, by retractors, and as soon as it appears in the slightest degree hazy, atropine drops or ointment (1%) must be applied at once, so that, in the event of a perforation occurring, there may be less likelihood of inclusion of the iris in the wound.

A common form of conjunctivitis found mostly in children is the phlyctenular type. This may or may not be accompanied by photophobia, according to whether the cornea is affected or not, and the treatment differs also. In a simple case it is usual to give some slightly stimulating lotion, such as perchloride of mercury, to wash out the eye with, and if only the sclerotic be affected, a little boric ointment gently rubbed over the eye by means of the closed lid will often suffice to bring about a rapid cure. Yellow oxide of mercury is seldom necessary in simple cases, and only irritates the ulcer when there is corneal complication. If the phlyctenule spreads on to the cornea a phlyctenular ulcer is produced, and the case must then be treated as a corneal affection—viz., with atropine ointment or drops (1%). Intense photophobia always accompanies this condition and is generally indicative of the extent of involvement of the cornea; it often makes examination extremely difficult, but as perforation not uncommonly occurs, an occasional inspection of the cornea is essential in order to see whether the atropine is taking effect. Ill-health is a predisposing cause, so that a primary part of the treatment is to attend to this by means of tonics, general hygiene, and change of air.

Any unusual or atypical form of conjunctivitis is often confined to one eye for a long time and defies all the ordinary methods of treatment. Under these circumstances it is advisable always to evert the lid and make a thorough examination of the conjunctiva on its inner surface; in this way, trachoma, some conjunctival growths, etc., may be detected and special treatment must be adopted. But a good rule to follow is to obtain an expert opinion whenever conjunctivitis resists for several weeks the ordinary methods of treatment described above.

Cornea—Affections of the cornea are usually either ulcerations of various types with special characteristics according to the organism present or interstitial keratitis. Ulcers of the cornea may be (1) superficial (associated with some slight conjunctivitis on which the condition of the cornea depends), (2) phlyctenular, (3) hypopyon, or (4) rare forms of ulceration. But from the general practitioner's point of view there is no need to commit one's self to a special diagnosis, since the line of treatment is practically the same in all forms of corneal ulceration. Treatment applicable to special types, after the ordinary methods have failed, are better carried out either by or after the advice of an ophthalmic surgeon.

It is well to bear in mind that, generally speaking, whenever the cornea is affected photophobia or a pricking sensation is complained of, and this symptom, though often unaccompanied by any visible manifestation of loss of tissue, should never be neglected. Conjunctivitis alone never gives rise to this symptom, and it is an indication that the cornea has become involved.

If in doubt about the condition of a cornea there are three methods of investigating in order to make certain on the point. 1. Loss of the natural brilliancy at any part. 2. Staining. A drop of fluorescin (2% in saline) instilled into an eye will stain any ulceration of the cornea a greenish color. 3. Examination with a small corneal magnifying lens. This will often render visible small spots too minute to be detected with the naked eye even after staining. Phlyctenular ulcers have already been referred to under conjunctivitis, and the possibility of perforation must always be kept in mind. But the two most dangerous and urgent ulcerations of the cornea are (1) the results of ophthalmia neonatorum or gonorrheal conjunctivitis, and (2) hypopyon ulcer. The former all general practitioners are on the lookout for, but the latter will often escape observation unless special attention be directed to it, since, contrary to expectation, it is generally unaccompanied by any pain or photographobia, and it is therefore wise to look for pus in the anterior chamber in every case of ulcer which is obviously severe and yet with absence of photophobia. Both these conditions, if temporized with, may lead to the loss of an eye in the course of a few days, and it is therefore advisable to share the responsibility as early as possible. The same may be said of any case where the corneal condition does not show signs of improvement after a few weeks of the ordinary methods of treatment. All cases of ulceration of the cornea must be treated by washing out the conjunctival sac with some form of non-irritating antiseptic lotion as for conjunctivitis, and applying either atropine drops or ointment (½ to 1%), *no matter where the position of the ulcer may be.* Provided there is no conjunctival discharge, the eye should be tied up and the irritation from bright light guarded against by wearing smoked glasses; this is better than confinement in a darkened room, which is apt to become depressing. Attention to the general health is always necessary in addition to local applications.

Interstitial keratitis (usually but by no means invariably due to congenital syphilis) is almost always an alarming condition to the general practitioner. Starting as an intense and deep vascularity of the cornea in the upper or lower quadrant (or both) at the limbus, it rapidly covers the whole of the cornea and gives rise to a whitish-red infiltration which effectually obstructs all rays of light, and the patient is blind to all intents and purposes. A vigorous and perfectly correct line of treatment seldom has any influence in checking its course up to this point, and the appearance of the eye and effect on the sight is so alarming to the patients and their friends that the general practitioner is continually bombarded with questions which he has considerable difficulty in circumventing if his knowledge of the subject happens to be limited.

Bathing the outside of the eye with as hot water as can be borne, the instillation of atropine, tonics, and the exclusion of light by dark glasses is the treatment to be carried out in order to obviate complications which often arise in the course of this disease; otherwise the cure is largely a question of time. It is characteristic of interstitial keratitis (certainly of the syphilitic variety) that, considering the apparently serious limits to which the eye has been reduced, the recovery may be so complete that the ultimate damage to the sight is surprisingly small, and the vision may be little, if at all, below the normal. This piece of information is an invaluable asset to the general practitioner's stock of knowledge at a more critical stage of the disease.

The Sclera—Episcleritis, even to the most experienced, is viewed with misgivings, as it runs a very chronic course and displays an obstinate indifference to many various lines of treatment. The only point for the general practitioner is

to be able to diagnose it, and thus not view too lightly the early manifestations, which are sometimes of an apparently trivial nature. Localized redness of the sclerotic near the limbus, with a nodular formation which often has a characteristic purplish hue, and over which the conjunctiva is freely moveable, is more or less typical of this condition. Its situation near the limbus renders it liable to be mistaken for an ordinary phlyctenule; it is distinguished from the latter by its chronic course, and the fact that it generally occurs in adults while it is uncommon in children. Therefore it may be said that when a superficial inflammatory patch appears at the limbus in an adult which looks like a phlyctenule, always suspect episcleritis and be proportionately guarded in giving an opinion. The causes of episcleritis are very numerous, and therefore require many different methods of treatment, Any source of infection or toxic absorption may produce inflammation of the sclera and calls for special treatment, but in the absence of any definite cause a general rule is to treat it like corneal conditions.

The Lids—A general practitioner is often called upon to advise in cases of blepharitis, meibomian cyst, and a stye. As regards the first of these, the treatment differs according to whether the edges of the lids are (*a*) moist or ulcerative, (*b*) much inflamed and red with a good deal of incrustation, or (*c*) only slightly inflamed with much or little incrustation. The moist type is best treated by painting the lids with protargol (20 or 30%) once or twice a week until they become dry, and in the intervals use a lotion containing boric acid and zinc sulphate, and rub gently into the lids night and morning some mild mercurial ointment (ung. hyd. amm. dil.). In the second variety it is best to begin with a bicarbonate of soda lotion (gr. x to ʒi) in order to dissolve the scabs, and then apply weak mercurial ointment by gentle rubbing as in the moist form. As soon as the tendency to the deposits of crusts has ceased, use a lotion containing sulphate of zinc (gr. i or ii to ʒi) and apply a stronger mercurial ointment (ung. hyd. flav. dil.) in the same manner as before. In the third variety similar methods should be adopted to those in the second, but the yellow oxide of mercury ointment may be commenced at once. I attach importance to the method of applying the ointment by rubbing and not merely smearing it on; the slight massage to the edges of the lids is, I think, a matter of no small account in the treatment of this disease.

A meibomian cyst must be dealt with when it gets beyond a certain size, and also when it has become chronic and shows no tendency to disappear. It is well to remember that in small swellings, and in those just commencing, gentle massage of the lid against the globe will often remove the obstruction in the duct of the affected gland which always marks the intial stage of a meibomian inflammation. This cyst, as it grows, points on the inner or conjunctival surface of the lid, as might be expected from its anatomical position, and however much redness or swelling of the skin there may be over it, a small pointing spot will always be discovered on the inner side, and it is in this position that an incision has to be made. In addition to this opening, which must be at right angles to the edge of the lid, the contents must be *thoroughly* scraped out with a small Volkmann's spoon, specially made for the purpose, until every vestige of the cyst wall has been removed, otherwise the enlargement will soon recur. It is as well to inform the patient that immediately after this little operation the cyst will swell up with blood, but that this will soon become absorbed, and in any case there is the possibility of a similar glandular inflammation occurring again at some future time.

On the other hand, a stye will tend to point along the line of the lashes, and shows no tendency to spread to the con-

junctival surface. It may often be left alone so far as operative interference is concerned, and will readily disappear on the application of hot fomentations or hot bathing; at the most a small incision when it is actually poining is all that is required. As soon as the lid becomes less inflamed, treat the case as one of blepharitis with a boric acid and zinc lotion, and the application of yellow oxide of mercury ointment by means of rubbing.

(To be Continued).

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ACUTE MASTOIDITIS.

Lefferts A. McClelland. in the *New York State Journal of Medicine,* forcefully outlines the indications for early operation in acute mastoiditis. He thinks there is much pernicious frittering away of opportunity for doing good, life-saving and organ-conserving work. After the incision by way of the membrana tympani, cases are too frequently subjected to inefficient palliative treatment, medicinal, topical and surgical, when it is better promptly to invade the antrum. Could these cases be more frequently handled by the direct method it would be a rare occurrence to find that extension of the suppurative process had occurred beyond the antrum or its contiguous cells.

As a rule such direct method would be conservative in the best meaning of the word. This plan of treatment would limit the amount of pain which a patient usually suffers and diminish fever, and maceration within the tympanum would be modified or prevented, which latter is so detrimental to the integrity of the mucosa. And there would be less liability of deep necrotic changes occurring to the bony walls of the cavity involved, while the orifice of the eustachian tubes would naturally be more competent to aid the process of drainage, one of its chief functions, since the mucosa being less swollen at its mouth would the better fit it for receiving the outflow in the drainage process.

The relief of pressure due to a drum full of pus serves to prevent the pus from pushing its way through the aditus to the antrum, and thence by a mining process through the roof of the antrum into the floor of the middle fossa of the skull, and also tends to avert encroachment upon the great channel which conveys the venous blood from the brain to the jugular. Early intervention will usually mean a less extensive operation.

If a case of otitis media acuta suppurativa which in spite of active and proper treatment (prompt and free incision of the membrana tympani, irrigation with warm antiseptic solution through the Fowler irrigator, suction by Siegel's otoscope, rest in bed, leeches, ice to the mastoid if tender, free catharsis, and such attention to the nose and epipharnyx as is necessary) remains unrelieved after forty-eight hours of such trial, as shown by tenderness over the antrum, elicited by deep, firm pressure. and especially if the patient still suffers pain in the ear, it seems wise to consider the question of doing a simple mastoid operation to cure the condition before serious damage may be done. If, however, the discharge is gradually diminishing, pain subsiding, mastoid tenderness going or gone, and the temperature shows no suspicious turn, it may safely be considered wise to continue the simpler plan of treatment.

But in influenzal infections and in such diseases as typhoid fever, scarlatina. measles and diphtheria the promptest intervention is demanded. These cases should be operated upon forthwith, for these are fulminating cases and the extent and character of the bony destruction are marvelous to contemplate. And here not so much dependence is to be placed upon the degree of fever and other clinical criteria.

MEDICAL PHARMACY.

PURITY OF THE DOCTOR'S DRUGS.

THE *New York Medical Journal* discusses this question. It points out than in all the machinery which has been provided for the detection of adulterated and impure drugs there is none for the supervision of the character of the drugs dispensed by physicians direct to their patients. The physician purchases from dealers whom he presumes to be trustworthy, and after the drugs have come into his possession no legal provision is made for their inspection. If the physician happens to be supplied by a dealer outside the State the transaction is of the nature of interstate commerce and the goods coming into the State from without are subject to inspection by the national authorities if taken in transit. There is in this way some check upon the quality of the drugs shipped into the State through the fear which the dealer has of government inspection. Where the purchase is made by the physician within his own State, however, the federal authorities have no jurisdiction and there is no way in which the quality of the drugs purchased can be checked unless the physician undertakes their analysis at his own expense.

The charge was made at the Rochester convention of the New York State Pharmaceutical Association that dealers had taken advantage of this condition of affairs and sold to physicians drugs which did not comply with their professed standard and which would not pass examination by any competent authority. Indeed, some of the speakers went so far as to intimate that many dispensing physicians were more careful as to the price than as to the quality of the drugs purchased for their own dispensing. We can not believe that this latter charge is well founded, for any laxity in this direction would be fatal to the physician's interest. If he administers inert drugs and the patients are not benefited, he loses his standing. It seems that even the lowest form of self interest would prompt the physician to dispense only drugs of the highest efficiency.

There may be more than a modicum of truth in the charge brought that manufacturers foist on the dispensing doctor drugs of inferior quality. From the very nature of the case such practices are less fraught with danger of detection than if the drug were sold in the ordinary channels of trade. Drugs in the drug store are subject to the inspection of local authorities; those in the physician's office are not subject to any inspection except such as he may choose himself to make. There would be a very liberal margin of profit for the unscrupulous dealer who might choose to furnish tablets of deficient strength of such expensive drugs as heroin, morphine, and aspirin. The only danger of detection in the ordinary routine would arise from the fact that the physician might observe the lack of physiological activity, and the utmost to be feared from such an observation is the loss of patronage of that particular doctor, a fear not so potent for the restraint of the evil-doer as the fear of detection and punishment by legally constituted authorities.

As the laws now stand there is no adequate supervision of the quality of drugs sold to physicians for their own dispensing. No physician would knowingly dispense a drug of inferior quality, but we should like to learn if any of our readers have found occasion to criticise the quality of drugs sold them for their own dispensing. If the charges which have been brought against the quality of drugs dispensed by doctors are true, steps should be taken to improve it, and the

doctors themselves will be the first to demand that such steps be taken.

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SODIUM PHOSPHATE.

J. A. Burnett, in the *Physician's Drug News,* says that Drs. Crocq and Luton, of Rheims, advocate the hypodermic use of sodium phosphate as a substitute for the animal extracts, and claim that it is equally efficient in all cases in which these extracts have proved to be of value.

Crocq's solution for hypodermic use contains sodium phosphate 1, alcohol 5, glycerin 20, distilled water 25; the dose of which is 45 drops subcutaneously with aseptic precautions, once daily or on alternate days. Luton uses a solution of the crystallized sodium phosphate and sodium sulphate.

If the claims of Drs. Crocq and Luton prove to be true it will make sodium phosphate a popular remedy for hypodermic use.

It is a well-known fact that the various animal extracts have a very wide range of usefulness. Dr. Potter says hypodermic injections of sodium phosphate have been used with highly beneficial results in syringomyelitis and in unilateral astasia—abasia. Potter does not state what kind of solution was used.

The hypodermic use of remedies is fast gaining ground, as results can be obtained in this way that can not in any other.

The hypodermic use of sodium phosphate should be thoroughly investigated. Sodium phosphate is soluble in 6 of water or 1½ boiling water, and insoluble in alcohol. Its solubility in water is much increased by the addition of citric acid. The dose of sodium phosphate for internal use is from 5 grains to one ounce. Effervescent sodium phosphate has the exsiccated sodium phosphate 20, sodium bicarbonate 47¾, tartaric acid 25¼, and citric acid 16¾. In my practice I find that a large majority of patients do not take effervescent preparations. Compound solution of sodium phosphate has sodium phosphate 100, sodium nitrate 4, citric acid 13, water to 100.

Dr. J. D. Albright has the following to say in the *Medical Summary,* February, 1898: I suppose all the readers of the *Summary* are acquainted with the excellent results frequently obtained from the use of phosphate of soda in torpidity of the liver, bilious headaches, dizziness, etc., although the mode of administration is somewhat disagreeable and bulky. The manufacturers of Melachol have made the administration of this salt easy, but any physician who will take the time can prepare a preparation similar to this higher priced one if he will do so as follows:

Sodium sulphate	℥x
Citric acid	℥j ½
Sodium nitrate	℥jss

Mix the sodium phosphate and the citric acid in a mortar and triturate thoroughly and they will at once begin to liquefy, but an ounce or two of water may be added to hurry up matters; after they have become liquid enough pour into a bottle. Place them on the stove and heat on a water bath until they have dissolved, and if the resulting fluid does not measure 10 ounces add water sufficient to make it do so.

Now powder the sodium nitrate and dissolve in the water with the solution of the other two and you have what to all intents and purposes is Melachol. It keeps well and is of the same specific gravity as Melachol. One teaspoonful combines about 70 grains of soda phosphate, citric acid and soda nitrate. Melachol claims 85 grains, but the above amount will probably make but little difference.

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CAPSICUM.

Ritter, in the *Medical Summary,* remarks that the common household remedy to "break up a cold," to warm up a person having a chill, or to relieve cramps in the stomach or intestines, is

alcohol in some form, usually whiskey, brandy, or gin. It is not the wisest or safest method to advocate to our patients the frequent and common use of alcohol, especially when we have at our command a remedy equal to and often superior to the action of alcohol. The remedy I am about to describe is capsicum, the common cayenne or red pepper. Capsicum is a pure stimulant, but in large doses it produces vomiting, purging, dizziness, and inflammation of the stomach and bowels. It is a safe and harmless remedy if properly used. It has long been used in laxative pills, thereby improving the capillary circulation and nerve tone of the entire intestinal tract. It is an excellent sedative in delirium tremens, producing a quiet and in some a deep sleep. It should be given in conjunction with concentrated nutrition.

This remedy can safely stand in any medicine closet or elsewhere, and it will never make any person a drunkard. It is excellent in the atonic dyspepsia of the alcoholic habitues, and in large doses will relieve the craving for alcoholic drink; besides it is the very best remedy we possess for delirium tremens. It is also serviceable in the treatment of opium and cocaine habits. It may be combined with strychnine, hydrastine, or other nerve stimulants and tonics. In relaxed conditions of the pharynx and post-nasal membranes it has a most beneficial influence.

It has no equal to warm up a person suffering from a cold or chill. A hot infusion is the most active. A serviceable gargle is made by placing in a cup of hot water a teaspoonful of each capsicum and salt; after standing a few minutes pour off the top and add a cup of vinegar.

Used externally, capsicum is of great value, producing an active rubefacient effect without vesication. In the treatment of chilblains it will excel where other and better remedies have failed.

Oleo-resin of capsicum spread on common adhesive plaster makes an excellent pain plaster, which you can assure your patient will not blister, and may be left in place four or five days.

Teach the laity the use of capsicum, and it will soon replace the alcoholic preparations. Capsicum will not produce a drug habit, but is absolutely safe in the hands of all.

STAPHISAGRIA.

Leming, in the *Eclectic Medical Journal,* states that the action of this drug has never been clearly defined. While its primary sphere seems to be the central nervous system, a number of its most important actions apparently are dissociated from this field.

The drug is poisonous both to the lower organisms and the human family. Given in overdoses it produces emetocatharsis, with prostration, disturbed equilibrium, and certain symptoms resembling, to a degree, aconite poisoning.

Staphisagria has been mainly considered as a remedy for three conditions: (1) Atonic conditions of the genito-urinary organs, with chronic discharges, imperfect evacuation of urine, and similar states dependent upon an impaired tonicity; (2) certain nervous states, as evidenced by melancholia, moroseness, and violent outbursts of passion; (3) various diseases of the eyes and lids, including styes and diseased states marked by blurred vision, flashes of light, and such conditions arising from a disturbance of the brain.

Its whole action is tonic or stimulant, regulating irregular or disturbed actions resulting from overstimulations and abuses. It should not be used in active ailments, but reserved for the case that is all down and out, whether it be spermatorrhea, chronic urethritis, insanity, or an affection of the eye.

The disease matters not; the condition is the essential and, once diagnosed, will prove curable by this remedy.

BRYONIA.

Ellingwood, in the *Eclectic Medical Gleaner,* declares that bryonia is distinctly a "fever remedy," when the fever depends upon acute inflammatory action. At such a time it has a distinct advantage over aconite, because it does not depress the heart or the circulation, and can therefore be continued for protracted periods, not only through the sthenic stage of the inflammation, but far into the asthenic stage, with beneficial results.

While bryonia does not stimulate mucous secretion to a pronounced degree, it promotes normal tone in the mucous glands, and thus opposes or prevents the dryness of mucous membranes during inflammatory fever, due to suppression of secretion.

No remedy is more plainly, more *specifically,* indicated than bryonia. It is indicated in acute inflammations in the chest where there is a hard, quick pulse, with a short, harsh, hacking cough; also where there are acute, cutting, pleuritic pains, increased by inspiration, or where there is a bright flush on the cheek, especially upon the right cheek.

It is also indicated in inflammation of any organ or structure covered by the peritoneum, where there is tenderness on pressure, with acute, quick, cutting pains through the organ. It is of peculiar value in inflammation of the synovial membranes of the joints, with soreness or pain upon movement, and acute cutting pains from any cause. The homeopathists lay all stress upon the symptom of "pain induced or increased by motion." They call this a keynote for the remedy.

Scudder gave as a peculiar indication a hard, vibratile pulse with supraorbital pain, extending perhaps to the basilar region. In all cases where pain is present as an indication for bryonia, if heat is applied, and other essential measures applicable to such cases are adopted, bryonia can be depended upon to control the pain quickly and satisfactorily.

Great Value in Visceral Inflammations —It will thus be seen that this remedy is of peculiar value in the treatment of acute inflammations of the thoracic viscera, of the pleura, of the peritoneum, of the abdominal viscera, and of the joints. Uncomplicated cases often yield to this remedy alone; but in many of the severe cases the indications for aconite will be plain, also, and no two remedies work more harmoniously together than do these two. They may be either combined or given in close alternation.

In pleuritis its indications are usually all present. Uncomplicated cases will yield to this remedy alone. Usually more rapid results will be accomplished by alternating it with aconite or with asclepias tuberosa. It must be continued if effusion be present.

In bronchitis, with short, quick, harsh cough, with short, sharp pains, especially if the sputum be bloody or frothy, bryonia acts directly. It should be persisted in. It will subdue pain and the cough promptly, and will exercise as marked an effect upon the fever as any special sedative known.

ELIXIR SODII SALICYLATIS.

Composition—The elixir of sodium salicylate contains 5 grains of pure sodium salicylate in each fluid drachm in a vehicle of aromatic elixir. It is always prepared fresh by the pharmacist when required for use.

Dose—The average dose of this elixir is 7 drachms (4 c.c.), after meals, and well diluted. A much larger dose than 5 grains of this salt is often to be administered, sometimes as high as 30 grains. This is readily accomplished by prescribing (in the case of 30-grain doses) 240 grains of the salicylate to each fluid drachm of the mixture.

Therapeutics—The chief use of this preparation is in acute rheumatism, acting as an anodyne and antipyretic; it

also lessens the liability to cardiac complications and shortens the duration of the attack. It is a powerful diaphoretic and an efficient cholagogue.

Remarks—Tablets of sodium salicylate should receive little favor from the physician, as their action is generally very irritating, unless accompanied by large draughts of water. They are frequently so hard as to resist all action in the secretions of the stomach and intestines.

According to Moule, sodium salicylate is a specific in acute rheumatism, but it must be used in larger doses at first than those commonly employed; in severe cases, 30 grains every hour.

Sodium salicylate is incompatible with mineral acids or with any preparation containing such.

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THYMOLIS IODIDUM, U. S. P.

Thymol iodide is a bright, chocolate-colored, or reddish-yellow, bulky powder, with a very slight aromatic odor. It contains 45% of iodine. It is insoluble in water and glycerin, but readily soluble in fixed oils. It was formerly trade-marked as "Aristol."

Thymol iodide is a valuable antiseptic, similar to iodoform. It has the advantage, however, of being less toxic and practically odorless. It may be used as a dusting powder, in ointment or in a solution of liquid petrolatum of about 10% strength.

This chemical possesses, in a mild degree, the antiseptic properties of its component ingredients, thymol and iodine. Its action is, as a rule, mild, and its greatest activity is made apparent in nasal and aural affections requiring mild antiseptics. It also favorably influences the course of many cutaneous affections, wounds and sores.

The principal action of this chemical, however, does not reside in its antiseptic properties, but more especially in its direct effect upon the tissues in granulating surfaces. Pharmacologists have not definitely established its peculiarly beneficial action, but it appears to diminish the secretion of the wounded surface and in this manner affords a less suitable medium for the growth of any germs that may be present.

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IMPURE APOMORPHINE.

Harnock and Brandt, in *Muenchener Med. Wochenschrift,* point out that many specimens of apomorphine on the market are very impure and contain a large percentage of the polymeric trimorphine. Where one-half milligram of pure apomorphine will cause prompt emesis, two milligrams of the impure drug are necessary, proving that only 25 to 33 per cent is really apomorphine and the rest trimorphine. The latter acts very much like morphine and may cause paralysis of the respiratory centers. The pure salt dissolves to a faintly alkaline solution, which soon turns green, while the impure preparation is white and more voluminous; the solutions are acid and do not change color so readily. Many cases of retarded and poisonous action can probably be explained by this toxicity.

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THERAPEUTICS OF OXALIC ACID.

J. C. McWalter writes to the *Lancet* that he has used oxalic acid with apparent success in sciatica. The dose given was one grain three times daily. The *British Pharmaceutical Codex* suggests that the dose is from a quarter to a half grain, but the correspondent has found that this can be exceeded with impunity.

Many observers believe that oxalic acid, or at least some of the oxalates, have a specific effect in inflammatory conditions of the gastric mucous membrane. Such has been my experience with oxalate of cerium, which McWalter used pretty extensively for the purpose.

It is stated that a lemonade of oxalic acid—five or six grains to the pint—is used in France as a febrifuge. The correspondent has not tried so daring a dose, but is inclined to think that so much might be taken with safety.

ELECTRO-THERAPY.

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ESTABLISHED VALUE OF THE GALVANIC CURRENT.

BY MAY CUSHMAN RICE, M. D., Chicago, Ill.

THE above title refers to those diseases which actually can be cured by the galvanic current, those in which theory and experimentation are out of the question altogether. Special emphasis should be placed upon the diseases in which the galvanic current is superior to all other therapeutic agents. For example, a given disease may be cured by several different methods, menorrhagia may be cured by removing one or more of the organs directly responsible for the menorrhagia. The latter ceases at once, but if the patient suffers from adhesions or reflex nervous disturbances the means of cure have not been well chosen. I shall confine myself, therefore, to those diseases in which electricity is the treatment to be preferred above all others.

Understand, that I do not mean that electricity should in any case be used exclusively, but that it should be the main thing, the chief reliance. Remedies of different kinds, hygienic measures, etc., will always be valuable and even necessary adjuncts to successful electrotherapy.

Granted that there are certain things that can be cured by electricity, and that this, all things considered, is the very best curative agent known at present—what constitutes success in the treatment of such diseases? The pivotal element of success, here as elsewhere, is knowledge, an understanding of the subject. This seems to have been forgotten frequently, many persons totally ignorant of the subject attempting to cure diseases by electricity; and yet a knowledge of physics in electro-therapeutics is exceptionally important for success.

The galvanic current, better termed the continuous or constant current, acts in two diametrically opposed ways. It contracts and it dilates blood-vessels. It is sedative. It is also stimulating and irritating. It is acid and it is alkaline. The constricting, sedative and acid action of the current belong to the positive pole; the dilating, stimulating and alkaline action of it belong to the negative.

If, then, one ignorant of electrophysics applies electricity, what probability is there either that justice will be done to the patient or that the remedy will be given a fair trial?

Granted that the adequate knowledge obtains, it is at once seen what a remarkable therapeutic agent we have in the continuous current, a means of checking hemorrhage with the positive pole, of increasing the blood supply with the negative; a sedative with the positive pole or a stimulant with the negative; a means of rendering a part acid or alkaline according to requirements. This suggests the value of the constant current in the treatment of inflammations wherever these exist. For a large percentage of cases of chronic metritis, endometritis, ovaritis, catarrhal salpingitis, for pyosalpinx, where drainage exists it is a positive cure. For these we rely upon the polar effect of the positive pole and enhance its efficiency by carrying into the tissues by cataphoresis one of the oxidizable metals, copper being the one most often employed. The active vaginal

electrode is a copper ball covered with absorbent cotton and gold-beaters' skin, an animal membrane, which provides a smooth covering for the cotton. This covering should not be removed, but cleansed with soap and water and the electrodes kept in an antiseptic solution for further use for the same patient. The indifferent electrode is a large thick sponge or cotton pad, placed upon the abdomen or back. The two electrodes should be in such relation to each other that the current passing between them will directly include the diseased part. Three treatments a week is the correct number for the average case. There is little inconvenience from this application, but, on the contrary, as a usual thing a sense of relief. The patient goes about her accustomed avocations and in a few weeks is symptomatically cured.

The splendid results obtained in a large number of interstitial fibroid tumors, by this same treatment, amply justifies the inclusion of these growths in the list of diseases positively adapted to electro-therapy. Nothing is more rational than the shrinking of these tumors by cutting off their blood supply, and thus taking away their nourishment. The former severe Apostoli method with the negative pole is now little used; the more gradual, but effective method with positive pole has taken its place. From 60 to 100 milliamperes of current should be used, therefore the necessity of a very firm covering for the vaginal electrode, the copper ball. With the exception of the larger current the technique is the same as that for inflammations. The relief from symptoms, such as menorrhagia, neuralgia and suppression of urine, is sure but gradual. Consequently, those cases which require immediate relief should be advised to accept radical measures. All interstitial fibroids not larger than a cocoanut, of comparatively slow growth, with symptoms of only moderate severity, may be symptomatically cured by positive galvanism in from three to six months. The growth decreases to from one-half to two-thirds of its original size; it becomes harder and more compact; save for the physical examination it does not exist. My experience is that with efficient treatment the cure is permanent. I believe that those who have had electrical treatment who later fall into the hands of the surgeon and are operated upon have had insufficient treatment, often administered by those inexperienced in the use of electricity.

Nowhere are there more definite indications for the positive pole of the galvanic current than in inflammations of the endometrium. Astringent, germicide and sedative, a bare copper electrode in the uterus, accompanied by the current, deposits copper in the interstices of the glands and coagulates the glutinous discharge, which it is impossible to remove by swabbing or irrigation. This clings to the electrode, leaving a smooth, sterilized surface. The removal of this accumulated detritus favors drainage and is an important factor in promoting a cure. Amalgamating the copper electrode with mercury does not prevent this action, but hinders the sticking of the electrode. It, therefore, is advisable as a rule. If this treatment be given, chronic endometritis seldom, if ever, requires curettage.

Corporeal endometritis is unusual, endocervicitis is common. This requires the electrode to be passed to the internal os only. The amount of current should range from 30 to 60 milliamperes. Three treatments per week should be given. The time required for cure depends upon the severity of the inflammation, the complications and the idiosyncrasy of the patient.

Internal bleeding hemorrhoids is another affection in which the polar action of the positive pole has pronounced therapeutic value. A short rectal electrode, covered with chamois skin, com-

pactly fitted to the electrode, will, under 12 to 15 milliamperes with the positive pole of the galvanic current three times a week, cure the average case in from fifteen to twenty-five treatments.

The negative pole of the galvanic current, vaso-dilator, stimulant, alkaline in action, though less often employed therapeutically than the anti-inflammatory positive pole, when indicated, is very useful.

The principal conditions in which the negative current is of decided value in gynecology are amenorrhea, adhesions and stenosis. For the first two the metal ball should be covered as before and used per vagina. For the last, stenosis, an olive-tipped electrode, a size too small to enter without the current, is passed to the stricture, then five milliamperes of current are allowed to flow for five minutes, or less, if the olive enters the stricture. The time should not be extended beyond the five minutes. If the olive fails to pass, three days later another attempt should be made. Larger sizes should be used at different sittings at least three days apart. The small current does not cauterize the tissue, but softens it; absorption takes place and the canal is permanently dilated.

There is a large field for the negative current in electrolysis, in the removal of hairs, moles, warts and small nevi. A needle connected with the negative pole of the galvanic current and passed to the papilla at the base of the hair is sure death to the hair which grows from it. A method perfectly anesthetizing the skin by the cataphoric use of cocaine and adrenalin which I have lately discovered renders the operation practically painless. The principle is the same for all electrolytic work, namely, the decomposition of the part in contact with the needle or other electrode by the alkalies, which appear at the negative pole because of their affinity for it.

ROENTGEN THERAPY IN ACNE.

Fischer, in the *New York Medical Journal,* describes the technique in these cases as follows:

The patient is placed in the recumbent posture; the hair, eyelashes and eyes, and if a man, the mustache, are covered with lead foil; each side of the face is treated separately, as it is difficult to get an even distribution of the rays if full-faced exposure is made, especially if there happen to be a number of lesions back of the malar eminences or near the angle of the jaw; a tube of low vacuum is used, held in a protective leaden glass shield, eight to ten inches above the region over which the exposure is to be made; the rays, which are filtered through sole leather, should allow the passage of three-fourths to one milliampere of current through the secondary circuit, or, if a radiometer or milliamperemeter can not be employed, about the radiance that in a darkened room will show as a faint yellowish-green light; each side of the face receives an exposure of six to ten minutes, depending on the amount of inflammatory reaction that is present, those cases where there is already present considerable redness not being treated so strenuously, while in cases where there is much induration, as in the tubercle form of acne, the more prolonged exposures are given. Treatments are given twice a week, although after a time the seances may be reduced to once a week. More frequently than this may produce a burn, and I have never found it necessary, or even advisable, to do as Stelwagon and others have recommended, to push treatment to the extent of producing an erythema, and then discontinuing treatment until the redness had disappeared.

Occasionally one meets individuals who seem to possess an idiosyncrasy to the X-rays, and even one mild exposure may produce a reaction. It is almost axiomatic among radiographers that persons who tan readily in the sun or

are easily subject to sunburn, are most liable to an X-ray dermatitis, and I always inquire from patients before starting treatment if they are of this type. If the answer is in the affirmative I regulate my doses of the rays accordingly.

Acne, when under treatment as outlined, follows a somewhat uniform course. I may mention at this point that in all the patients reported above, all local and systemic medication was stopped, the only exception to this being in Case 10, where autogenous vaccines were given in conjunction with the X-rays. In another case under my care at the present time and which is not reported, since it has not been under treatment sufficiently long to be incorporated in this series, the vaccines are also being injected by the attending physician, Dr. J. Thompson Schell. These two cases seem to have cleared up somewhat more speedily under the combined treatment than under the effect of röntgenization alone, although the two cases are not sufficient from which to draw positive conclusions.

For the first two or three weeks after commencing treatment little change can be noted in the disease; gradually the redness is seen to become less pronounced, and the lesions almost imperceptibly to fade; the indurated areas decrease in size, and in the pustular form of acne there is less tendency for suppuration to result. One of the first effects noted is the disappearance of the oily seborrhea, which, Saboraud asserts, always accompanies the acne. Later it is seen that the lesions are smaller and that the new pimples that make their appearance during the course of treatment are more superficial, and are principally of the papular variety; they do not remain on the face for several weeks as is usual in this disease, but run their course and fade within four or five days. It is almost impossible to prognosticate how long a given case will require to effect a cure, some of the milder forms of the disease yielding less readily to treatment than the most severe. For the pitting and scarring that result from the old eruptions, not much can be promised, but even these sometimes show improvement from the rays. As will be noted in the report of these cases, in some of the patients there was a tendency to recurrence. This is usually of a mild type, and a few exposures are sufficient as a rule to clear it up. In none of the patients whom I have been able to keep under treatment has there been a return of the acne in a form as severe as it was previous to the treatment.

The results achieved in this series of cases would lead to the belief that acne is a local disorder, rather than is usually thought to be the case, the manifestation of a systemic disorder. Aside from the eruption, all the patients were in excellent health, without history of gastric disorder, constipation, impaired appetite, circulatory disturbance, or impaired vitality. In only one patient (Case 4) was there an antecedent history of previous disease, this being an attack of typhoid fever, the acne appearing about a month after convalescence. No search was made for the bacillus of acne, which a number of observers (Gilchrist, Unna) aver is always present in the lesions, and which still further points to the local character of the disease.

The manner in which the X-rays produce their curative action in this condition is as obscure as in other cutaneous affections (ringworm, lichen planus, chronic eczema, epithelioma, etc.), in which Röntgen therapy frequently accomplishes brilliant results. Kassabian asserts that the X-rays produce a slightly stimulating action on the inflamed sebaceous glands, and that the muscular atony accompanying this condition, as manifested by the comedones blocking up the glandular orifices and the consequent oily appearance of the skin, is overcome by the application of the rays.

An analysis of the foregoing series of cases would cause one to be rather optimistic as to the results of X-ray treatment in this skin affection. Of course, I do not deprecate the usual methods of treating acne; lotions, ointments, tonics, and hygienic régime are usually sufficient to clear up the vast majority of acneiform eruptions. But there still remains a class of cases which, despite rigid and faithful adherence to these therapeutic measures, absolutely fails to respond, and it is in these stubborn, and often over-treated cases that a field for X-ray therapy can be found.

Schamberg regards the X-ray as the most important single therapeutic measure in the treatment of acne; Tousey says he has never failed to cure the most severe form of acne rosacea with it, although in conjunction he employs a simple salicylic acid ointment; Stelwagon approves highly the method, but reserves its use for "persistent, rebellious cases."

* * *

IMPROVED DIAGNOSTIC METHODS IN KIDNEY SURGERY.

Limiting his discussion to the diagnosis of surgical diseases of the kidney and upper urinary tract, Dr. J. M. Mason (*Southern Medical Journal*) finds that every investigation presents the following problems:

1. The location of the part of the urinary system which is the seat of the disease.

2. The determination of the nature of the disease.

3. The demonstration of the presence of a second kidney and the determination of its functionating capacity if the removal in whole or in part of its fellow is contemplated.

The special instruments necessary are —cystoscope, ureter catheters, radiographic ureteric bougies and the X-ray machine.

Through the use of these instruments the condition of the interior of the bladder and the ureter mouths may be determined; the presence of stones, tumors, ulcers, and diverticula may be demonstrated; urine may be collected separately from each kidney for comparative examination, and X-ray pictures may be obtained which are capable of demonstrating stones anywhere in the urinary tract.

With radiographic catheters in each ureter, much confusion in the interpretation of X-ray shadows may be cleared up, in that we are able to exclude those shadows cast by phleboliths, enteroliths, or calcareous glands in the neighborhood of the ureters. Especially is this true if we make use of stereoscopic radiographs.

The whole outline of the ureter and kidney pelvis may be distinctly photographed by the previous injection of solutions of collargol through the ureter catheter.

For accuracy in kidney diagnosis the cystoscope, the ureter catheter, and the X-ray are essential. For safety in kidney surgery, the presence of a second kidney must be demonstrated, and its condition must be determined by the functional tests.

Taken altogether this is far from being a simple or easy matter; but, if properly carried out it presents the best opportunities for the formulation of an exact diagnosis as well as for the performance of a thorough, complete and satisfactory operation. This, on the whole, is the *ultima thule* of every medical effort as well as the object of every progressive and capable medical man, irrespective of any specialty.

THERAPEUTIC BRIEFS.

Subacute Rheumatism.—

Oppenheim advises the following local applications:

Mentholis	gr. xv
Guaiacolis	5j
Methylis salicylatis	5j
Olei camphorati	ad 5iv

M. Ft. linimentum.

Sig.: Use locally on affected parts.

Acidi salicylici, Olei terebinthinæ aa	5j
Adipis lanæ, Adipis aa	5iv

M. Ft. ung.

Sig.: To be applied frequently to affected parts.

Chlorali hydrati, Potassii bromidi aa	5j
Syrupi codeinæ (1:500)	5j
Aquæ	ad. 5iv

M. Sig.: One tablespoonful at night.

* * *

Calcium Salts in Bronchial Asthma.—

Kayser, in *Therapeut. Monatshefte*, reports that in thirteen cases of bronchial asthma, good results were obtained from the following preparation:

Calcii chloridi	20.0
Syrup. simpl.	40.0
Aq. dest. ad	400.0

Sig.: One tablespoonful every two hours in milk.

After three days the attacks became less marked and sometimes ceased for a period of several months. In general, the patients observed that early in the treatment the mucus became more fluid, respiration freer and sleep less disturbed. In two cases the treatment remained ineffective. Unpleasant effects were not observed.

* * *

Treatment of Pruritus Ani.—

Rave, in *Deutsch. med. Wochenschr.*, states that pruritus ani, hitherto one of the most intractable of afflictions, yields readily to the X-rays. The patient takes the knee-elbow position, or bends over, holding the buttocks apart with his hands. A soft tube is used, encased in a lead box with a small opening, the scrotal contents being further protected by lead foil. For the technical details the reader must be referred to the original article. A few exposures suffice for a symptomatic cure, though the procedure usually has to be repeated after three or four weeks. The results reported were so good that, if they are confirmed by other observers, we would seem at last to have a remedy for this most distressing affection.

* * *

Salicylic Ointment in Rheumatism.—

Scharff, in *Therapeut. Monatshefte*, says the value of various salicylic preparations such as oil of wintergreen, salicylic acid ointment as well as a number of proprietary preparations, when applied directly to rheumatic joints, is generally conceded. Scharff especially recommends the following preparation:

Acidi salicyli	solve in 10.0
Ol. tere inth	10.0
Sulfur. precip. sive sublim., Terebinthinæ aa	40.0

The ointment is spread over the affected area and covered with an occlusive dressing. If the skin is very sensitive, the latter may be replaced by an ordinary bandage or the ointment dusted over with flour or talcum. After three to five days the application may be renewed. If a dermatitis results an ichthyol zinc paste may be substituted for several days. It may be well to add that the last item in the prescription is not the oil, but the gum of turpentine. The mixture should make a stiff and adhesive, but perfectly homogeneous, paste.

NOTES AND MISCELLANY.

ANNOUNCEMENT.

The 26th annual Free Clinic in Orificial Surgery will be held in Hering Medical College, corner of Wood and York Streets, by Dr. E. H. Pratt on September 24th, 25th and 26th. For particulars, address E. H. Pratt, M. D., 32 N. State St., Suite 1202, Chicago, Ill.

AMERICAN ASSOCIATION OF CLINICAL RESEARCH.

The fourth annual meeting of the American Association of Clinical Research will be held in New York City, at the Academy of Medicine, on November 9, 1912.

The sessions will be held from 9 a. m. to 1 p. m., from 3 p. m. to 6 p. m., and from 8 p. m. to 10 p. m. The evening session will be open to the public.

Notable contributions on the "Negri Bodies," on certain "Fluids for Tubercle Bacilli in the Urine," on "Adjustment and Function," on Psychoanalysis and Traumbedeutung," on a "Pandemic of Malignant Encapsulated Throat Coccus," on "The Single Remedy," on "Indicanuria and Glycosuria," on "Disease Conditions Expressive of Correct Diagnosis," on "Biochemic Problems," on "The Two Most Far-Reaching Discoveries in Medicine," and others are to be given. Every member of the Association is cordially invited to contribute a paper. The title should be sent at once to the permanent secretary so that the program may be completed.

As soon as completed, the program will be mailed to you. Please make an effort not only to contribute a paper, but to be present at the coming meeting, to bring your friends, and to assist in the most important movement of medicine as represented in the aim of our Association, the systematic, scientific investigation and advancement of medicine by conclusive clinical and clinically allied methods.

Please invite your friends to become members. Your support and that of your friends will be cordially appreciated.

POULTICES SHOULD BE STERILE.

Prof. George Howard Hoxie, of the University of Kansas, in his most excellent book on "Symptomatic and Regional Therapeutics," states under the heading of localized inflammation that "the danger of infection should ever be in mind in applying a poultice, for the maceration incident to the poultice favors infection, even if in ordinary circumstances one might consider the area germ proof."

Again he refers under the chapter on Pain, to the dangers from using dirty poultices and that skin affections have been added to the ordinary disorder when bread-and-milk or linseed poultices have been used to relieve pain.

It is thus noted how important then it is in the employment of a poultice for the relief of pain and inflammation, that a sterile and trustworthy product be applied. Inasmuch as poultices are a means of producing hyperemia by the use of heat, and in so far as they do this better than by other means it is interesting to observe that in the belief of Prof. Hoxie that "the clay poultices, known best in the form of Antiphlogistine, are the best to employ, as they are sterile and clean."

Antiphlogistine affords not only a safe but clean method of utilizing the advantages of hot, moist heat in the treatment of pain or inflammatory conditions. It maintains heat in contact with the part for hours and its adaptibility is only secondary to its therapeutic value.

A FINGER GUARD.

W. J. Manning, in the *Journal American Medical Association,* recommends a device he has found very practical and useful in all cases of contusions at the ends of the fingers or toes, as well as after-amputations of these members. It is particularly useful when cicatricial tissue is forming or has formed during the healing process. He uses two strips of tin or zinc, one-sixteenth to one-eighth inch wide and four inches long, approximately, which are bent in horseshoe form and placed over the end of the finger at right angles to each other and bound on by a strip of adhesive plaster covering the distal ends of the bars or lapping over them. A turn or two of gauze applied first will protect the finger from the edges of the tin, or these may be covered with adhesive plaster. A space of one-eighth to one-fourth inch may be left between the end of the finger and the inside of the guard, through which the wound may be dressed from time to time. The whole may be enclosed in a bandage or the tin strips left exposed, as desired.

♣ ♣ ♣

COMPOUND STILLINGIA LINIMENT.

Prof. Lloyd states in the *Druggists' Circular* that the following is the correct formula for compound stillingia liniment:

Oil of stillingia	1	fl. ounce.
Oil of cajeput	½	fl. ounce.
Oil of lobelia	2	fl. drachms.
Alcohol	2	fl. ounces.

Mix together.

Prof. Lloyd adds that "it has stood in eclectic literature for nearly sixty years as the one formula. In some instances, owing to the fact that the tannates of stillingia are prone to gelatinize, part of the alcohol may be replaced by glycerin, which makes an old preparation more sightly. This writer protests against a substitute made of fluid extracts as being harmful and inadequate. Every pharmacist can easily compound the authentic preparation, which, as the test of time demonstrates, needs no improvement or alteration."

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Treatment, in two 3-dram vials, $2.00 net. No sample or trial treatments.

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The Medical Brief

ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG, PUBLISHER T. G. ATKINSON, M. D., EDITOR

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The Medical Brief

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EDITORIALS.

HEALTH INSURANCE.

WE desire to call the attention of the medical profession to the growing demand for insurance, not only of life, but of health, at its hands. If the spirit of the times calls for life insurance companies to go into the business of preventive medicine, it is equally demanding that medicine go into the business of life and health insurance, to indemnify people, not against the economic consequences of sickness and death, but against sickness and death themselves.

It may appear a trifle gratuitous and ungracious to speak of the matter in this admonitory fashion, for medical science points with pride to the active position she has already taken, and the large things she has already accomplished, in the way of public hygiene and prophylaxis. Has she not organized quarantines and sanitaria, established State and municipal health boards, inaugurated pure food commissions, promulgated hygienic instructions, and in a hundred ways promoted the sanitary welfare of the public? All of which is splendidly true, and we yield to none in our prideful appreciation of these signal achievements. That which we are attempting to say here is said without prejudice to the well-deserved credit of medical science on this score.

But we may perhaps be permitted, without misunderstanding, to point out that all of this public preventive movement on the part of medical science has had its reason in a sort of attitude of *noblesse oblige* rather than in the constitution of medicine itself. Not that we deprecate that attitude or its results—God forbid—but we point it out for the sake of our present argument. It is regarded and performed as an external rather than as an internal function, and is delegated to a special division of medicine. It is a work of supererogation, not an inherent element in the profession and practice of medicine. It is observed between medical science and the public as wholes, not between physician and patient as units.

But the internal, inherent, unit phase of it is coming, and coming fast, when every individual physician will, by virtue of his calling, be a health insurance agent, whose paramount office, like that of the present-day insurance man, will be to head off and weed out disease among his clients by systematic prophylaxis, as the life insurance companies do by selection, and his subordinate, accessory business to treat and cure disease, which will occur as an unavoidable accident, as the insurance company has to pay an occasional death benefit or accident claim.

Organized medicine has already struck the first note in the sounding of the economic aspect of the matter in raising and seriously discussing the question of establishing an insurance relation between physician and patient by which the doctor should be paid a stipulated regular sum by his clients to take constant care of them, his stipend to cease during the client's sickness. To be sure, the question

has thus far been laid on the table, and we think rightly so; but it will eventually demand attention and action. The fact is that before the economic side of it can be consistently canvassed, the scientific and professional phase must be developed. Ways and means must be devised and systematized for a satisfactory and efficient prophylactic diagnostique.

Of all the means at our command for the carrying out of this individual prophylaxis, perhaps the possibilities of the laboratory would seem to offer the best and most practicable field. Indeed, it appears to us that this must be the ultimate and ideal function of the clinical laboratory. And yet it is a sphere of usefulness which has as yet hardly been thought of, far less attempted. Thus far, the laboratory has been utilized sheerly for purposes of end-diagnosis, that is to say, for the detection and confirmation of structural products which mark the later, and too often the incurable, phases of disease. In urinalysis, for example, we have been searching for albumin, and casts, and sugar, and acetones, all of which characterize the last structural and practically hopeless manifestations of disease; whereas it is well known to every physiologist and pathologist that the urine reacts with promptness and susceptibility to the earliest functional deviations of metabolism, and ought to furnish invaluable data for prophylactic diagnosis. Under the modern stressful conditions of modern life men and women should be encouraged to submit their urine for analysis periodically, just as they submit their teeth to the periodic scrutiny of the dentist, for which a proper fee should be charged, either by the time or by the year. Such a measure might be carried out by physicians themselves, or better still, perhaps, by arrangement with some laboratory devoted to that kind of work.

Other ways and means will suggest themselves to the intelligent mind or coöperation of minds. Our purpose in this editorial is fulfilled if we make good the point that the spirit of health insurance is in the air; that eventually, and not so far in the future, prophylaxis will become the essential element in the practice of medicine, and he is a wise man who aligns himself with the march of events.

THE ESTHETIC SIDE OF PRACTICE.

WE physicians, as a class, are sadly deficient in the esthetic elements of life. It would almost seem that there is something about the nature of a doctor's work that robs him of his appreciation of those simple amenities which lighten and brighten human life and go far to make the whole world kin. But it is altogether too disagreeable to suppose that our intimate contact with life's wretchedness and weakness coarsens our sentimental fibre and makes us callous to its softer touches. We prefer to believe that in the earnest pursuit of our calling we simply neglect the lighter side of life. Even in this we do wrong, and, while rendering our patients the weightier service, we miss the smaller, simpler means of grace by which we might bring joy and cheer to hearts whose sore need of it is evidenced by their need of us.

Consider, for instance, so commonplace a thing as the means of their approach to us, and the atmosphere in which they find us; the entourage, in other words, of our offices, and the manner of their reception there. A trivial matter, we think,

in view of the serious business upon which they come, but these folks are in just the condition of mind and body to be easily influenced by trivial things, and the very sombreness of the occasion calls for an antithesis to relieve it. Too often our offices, even the reception rooms, are dingy, gloomy places, whose very arrangement and atmosphere seem deliberately designed to emphasize the gravity of the visit, and to give the susceptible patient the impression of being ushered into a mysterious and awful presence. Such an impression may minister to the vanity and affectation of the physician, but from the patient's viewpoint it is a piece of professionalism which is not far removed from quackery.

How much pleasanter and more grateful to the patient's wrought-up sensibilities if we should seek in the arrangement and decoration of our office—and especially of our reception rooms—to counteract, as much as possible, the trying nature of the occasion; to give the place some touches of beauty and color and homeliness (in its best sense), such as the doctor himself looks for in his own house as a relief from the sombre depression of his work. In the busy city office, where time and space are at a premium, and everything must be done with a certain degree of routine, this is more difficult to attain, but in the country and small towns it is perfectly feasible, and in any place it is a matter of the spirit rather than of the materials.

Rarely one comes across the exceptional man who understands the value of these little things, and from him one learns their value, too. The writer knows a famous oculist, not a hundred miles from here, who is not infrequently accused by his colleagues of being a fop. He always wears a flower in his buttonhole; not only his reception room, but his office is a thing of beauty and a joy forever in its tasteful and dainty arrangement; and once, when the writer happened to be in his operating room, he saw this "fop" tenderly lay a nine-months baby on the daintiest of baby cushions while he gently massaged its cornea (it was a charity case at that), and has never forgotten the lesson of estheticism which he learned from the whole combination.

There is no excuse for our being so terribly "professional" in our entourage, and so utterly neglectful of the little graces and amenities that help to color and relieve the all-too-universal monotone of life. In this respect we may with advantage take a leaf out of the books of those cults which we profess to despise. The Mental Healer, the Christian Scientist reader, the New Thought dispenser, the osteopath even, all seem to have learned and digested the lesson better than we of the regular system; and we may depend upon it this accounts for much of their success in competition with us.. Their whole attitude toward their patients plainly says, "While it is true that our strictly professional relations must deal with serious and unpleasant things, it is not necessary or desirable to flaunt those relations in your presence, or make all our surroundings talk shop, or to forget the little acts of cheer and comfort that are due between human beings." And that is the spirit which the medical man—no matter how impressive his skill or reputation—needs to cultivate.

Whatever other means of grace he may or may not have available for carrying out this sentiment, the physician can surely brighten his office with a few fresh flowers each day. These are within everyone's reach, and their influence upon the heavy spirit is as great as it is subtle. How many of us ever take the trouble to brighten our offices and our reception rooms with a bouquet of flowers? The simpler the flowers, the better, so they be bright colored and fresh; not such as to

suggest a funeral. If we gather no further lesson from this little homily, let us at least resolve that we will, as often as possible, brighten our offices and bring gladness to our patient's hearts, with a few simple, cheerful flowers!

MAURICE H. RICHARDSON.

A GREAT man is fallen in Israel. Indeed, if we may be sure of not being misunderstood, we will say that the greatest of the sons of medicine in this country has passed away. There have doubtless been men who have contributed to the science and technique of medicine more than Maurice Richardson; men whose names will possibly live longer in its strictly professional annals. But we confidently aver that no man ever adorned the vocation of medicine who did more—and few who did as much—to lift it out of narrow sectionalism and breathe into it the broadening spirit of true culture and humanity.

This is, indeed, the great lesson of Dr. Richardson's life and work—a lesson which we have over and over again tried to teach through the feeble medium of cold, inadequate words, but which in the person and career of this man shone forth in living characters—that the science and practice of medicine, like every other calling, are but the agencies by which men minister to the world's deep needs and aspirations. That material things are but the outward and visible signs of an inward and invisible spirit, and he is a pitiably unimaginative man who does not in some dim wise discern, even though he can not interpret, as this man could, the inner meaning of his own calling. That somewhere in the circle of every man's life and work there is a line which, cutting the circle at its circumference, leads out into the larger sphere which surrounds it; and that it is every man's duty, no less than his privilege, to seek and to follow this line.

We do not belittle Dr. Richardson's scientific and professional work and influence. In his own chosen specialty he was an acknowledged master, holding and ably filling one of the highest positions in the gift of American medicine. As a surgeon he had few, if any, superiors. Indeed, if in the conception of surgery we include, as we ought, the exercise of a broad, ripe judgment, then we may truthfully say that he had few, if any equals; for he possessed the rarest and clearest faculty of specialized common-sense that it has ever been our lot to contemplate in the surgeon, as well as the capacity, even more rare among surgeons, of regarding every case from the standpoint of the patient. All of these qualities in Dr. Richardson we acknowledge with pride and gratitude. But these are all tributary to the one supreme quality of the man, that he was greater than his work, and included it as the whole includes its part. Not as a surgeon, chiefly, but as a big, broad-minded, high-souled, human-hearted, cultured man, who found time to be a brilliant surgeon, and chose that calling through which to give himself expression, will his influence upon medicine and upon the world endure.

Heaven knows we need such men, such lessons, and such influences in medicine today, and need them badly. We can ill spare such lives as that of Dr. Richardson. We trust that, in due time, someone who is adequate to the task will gather together and put into permanent form the many wise and helpful utterances that have fallen from his lips and his pen, for our continual guidance and inspiration. But, whether that be done or not, the influence of his rich, overflowing life will fructify the lives and hearts of men for many succeeding generations. Being dead, he yet speaketh.

Goitre.

By J. J. LINK, M. D., St. Louis.

GOITRE represents one of those borderland points where the frontiers of surgery and internal medicine touch one another; hence it affords a necessity for the exercise of the nicest judgment by both the surgeon and the internist. It is also a subject in which, thanks chiefly to the researches and operative work of Kocher, our knowledge has of recent years undergone considerable modification and advancement. Dr. Link here presents the matter in all of its aspects, from the standpoint of the specialist, for the benefit and guidance of the general practitioner—which is, of course, just what our readers want. Like all men who know their subjects thoroughly, Dr. Link speaks clearly, moderately, judicially, with no hobbies to ride or fads to exploit.

The thyroid body or gland is a very vascular organ, having two lateral lobes and one middle lobe, or isthmus, joining the two lateral lobes. It is about two inches in length by one and one-fourth inches in breadth, and three-fourths of an inch in thickness, and weighs from one to two ounces. The lateral lobes are somewhat coneshaped, the apex pointing outward. Its position extends from about the sixth ring of the trachea to the sides of thyroid cartilage, is situated between the sheath of the common carotid artery and the trachea, and covered anteriorly by the sternocleidomastoid, the sternothyroid and the anterior belly of omohyoid muscles.

There is usually a conical process from the upper edge of the left lobe (sometimes it is found on the right) to which is attached a fibrous band or muscle that connects the gland to the hyoid bone. The muscle is called levator glandulæ thyroidæ.

The isthmus rests upon the second ring of the trachea. The thyroid body is closely attached to the trachea, cricoid, and thyroid cartilages by areolar tissue, and therefore rises and falls with the thyroid cartilage during deglutition. This is a very important fact to bear in mind when differentiating goitre from cervical tumors.

The thyroid gland is usually larger in women than in men and often slightly enlarges during the menstrual period.

In connection with the study of the goitre, it is most important to thoroughly familiarize ourselves with the parathyroid glandules. Our knowledge of the parathyroids and their functions has been very extensively investigated within the last two years. We have learned that they are small, ductless glands, yellowish brown or reddish in color, located within the capsule of the thyroid gland. They are usually four in number, two on either side of the lateral lobes of the thyroid gland. Each is supplied with a capsule of its own, and each has an independent blood supply derived from branches of the thyroid arteries. It has been observed that the nervous symptoms following the removal of the thyroid gland were due to the accidental removal of the parathyroids or to the cutting off of their blood supply. In tetany, following the removal of the parathyroids, it has been found that there is a diminution in the retention of calcium salts, and the administration of calcium salts under those conditions afford relief. It is therefore very essential to save them their blood supply, and it is recommended when operating upon the thyroid gland to sever only those vessels which enter

the thyroid gland and to operate from above down.

The Functions—It has been found that the thyroid gland contains the globulins and nucleins as well as iodothyrin (an iodine albumen). The amount of iodine in the thyroid varies. The thyroid of the adult contains a larger amount of iodine albumen than that of the child. In old age it is much lower. Dr. Albert Kocher found that out of two hundred healthy and diseased glands only two were without any iodine, and those were obtained from cretins.

It seems that when the demand is made upon the gland, the iodine diminishes and the secretion of the thyroid gland influences the metabolic functions and seems to have a special influence over the sympathetic nerves of the vascular system, also upon the skin and epithelial structures, the osseous system, and sexual functions. The functions of the parathyroids are not well understood. Animal experiments made by Gley, Vassale Generali, Thompson and others, have shown that the removal of all the parathyroid glandules results in fatal tetany, which was formerly attributed to the removal of the thyroid gland. It is believed that they attract toxic products of metabolism and prepare them for rapid excretion. When the two lower parathyroids are left, after the removal of all the others, the functions are not usually interfered with. When all but one of the lower parathyroids are removed tetany usually follows, but rarely fatal. These experimental results upon dogs have practically been confirmed clinically.

Pathology—Disease due to the absence of, or loss of, thyroid and parathyroid functions include myxedema, cretinism, idiocy, disturbance of growth, disturbances of the sexual functions, disturbance of sensation, epilepsy and tetany.

It has been estimated that man usually lives about seven years without a thyroid gland and then gradually succumbs to a fatal cachexia. In congenital absence of the thyroid gland, the time of life is somewhat longer, but no one has been known to live longer than twenty-two years with a total absence of the thyroid gland (according to Kocher). The surgical treatment of this condition rests upon the implantation of normal thyroid tissue.

Medical Treatment—Would suggest the constant ingestion of thyroid gland preparations.

Diseases due to hypersecretion of the thyroid gland, of which Graves' or Basedow's disease (exophthalmic goitre) is a typical example, and are now denominated under the general head of *thyrotoxicosis.*

The symptoms are not uniformly constant. In a typical case the thyroid gland is enlarged uniformly, and shows increased vascularity by expansive pulsation, thrill or blowing murmur, and enlargement of the arteries.

Tachycardia is one of the most important symptoms; there is a very quick, high-tension pulse, cardiac and vascular murmur, probably due to the increased velocity of the blood; hemorrhages from the gums and nose, capillary pulse, and a feeling of heat.

When the disease is protracted the pulse becomes irregular. The blood pressure is usually increased. A fall in blood-pressure is said to be an unfavorable prognostic sign and is indicative of insufficiency of the heart.

There is considerable bodily unrest, insomnia, tremor of the hands, arms, legs, lips, eye-lids and pupils.

The axophthalmos or protruding eyes are most common when the symptoms are brought on suddenly between the movements of the lid and the globe on downward motion, sluggish convergence, the eyes are staring when looking at one object and often have a peculiar, stary look. The whole picture is that of unrest, anxiety and fear. The skin is moist and the patient perspires freely during

excitement. The hair may fall out, the nails crack and may be marked with longitudinal lines, and the skin is frequently pigmented. Metabolism is increased, temporary and frequent attacks of indigestion and diarrhea without apparent cause. There is emaciation and the patient is fatigued, sometimes has a wabbling gait. The menstrual flow decreases or ceases altogether. The leukocytes undergo alteration and the number is slightly diminished; the neutrophile leukocytes are sometimes diminished to half their normal number, the lymphocytes are increased to twice the normal in many cases; the number of eosinophilic leukocytes may be increased in some cases, while in others they are diminished.

The red blood cells and hemoglobin are normal. It has been observed that in thyrotoxicosis, artificially introduced iodine will not increase the amount of iodine excreted, nor will it increase the amount of iodine in the thyroid. This not being the case in ordinary goitre nor in the normal.

Prognosis—The very acute form of thyrotoxicosis usually runs a very rapid course ending in death; while the more mild forms if untreated may go on with more or less acute exacerbations and die of some intercurrent disease.

The chronic forms often run a very indefinite course, running into complications such as glycosuria, trophic disturbances, paralysis and neuralgias, etc.

Treatment—Non-surgical. Consists chiefly in rest, avoidance of all excitement, good hygienic and pleasant surroundings, change of mind from all former worry and anxiety; for it has been plainly shown that anxiety, worry, anger and fear has increased hyperthyroidism. The first step consists, therefore, in removing cause from the patient or the patient from the cause. For the tremor and mental excitement, phytolacca, strontium bromide and tincture salix nigra have given me considerable satisfaction, these drugs often being sufficient to control the tachycardia. However, spartein and strophanthus are sometimes indicated.

Serums obtained from the glands of thyroidectomized animals have been used with somewhat varied results by hypodermic injections as well as by ingestion by mouth. In cases in which there were good results the effect lasted only as long as the serum was employed, and its effects seem to have been through its influence upon the system only for it did not seem to have any action upon the gland. Pulverized milk of thyroidectomized animals has also been employed. The so-called cystotoxic serum has been employed, and in some cases the results were quite gratifying, but it is by no means uniformly successful. Iodine injected into the thyroid gland has had some effect, but it is not lasting, and any permanent effect which may have been produced is the result of its cautery or shrinking effect upon the gland, thereby reducing its hypersecretion, or in other words, reducing the quantity of the thyroid fluid rather than altering it or counteracting it.

Surgical Treatment—The surgical treatment for Graves' disease undoubtedly gives the most satisfactory results under proper pre-surgical care and under careful and skillful operators. To say simply that an operation will cure every case of Graves' disease would not be telling the truth. Cases in which the disease has not advanced to such an extent that the heart, liver and kidney complications have come in, such cases may be given a very encouraging prognosis under the proper surgical procedures. As was previously stated, it has been proven beyond doubt that many of these cases of Graves' disease are brought on by worry, anxiety, fear, etc. Therefore, every case, before operation, should be given a course of pre-surgical treatment in which the patient is confined to bed, perfect quiet being instituted, and the nervous system

in every way put to ease as far as possibly can be done. I may state that a number of these cases have been known to die after an operation as the result of the fear caused by the prospective operation. These cases, when brought to the operating table, conscious of having to undergo an operation, were attacked with most severe acute exacerbations, rise of temperature and tachycardia; the temperature going up as high as 110° before death, while in some the temperature reached 106° or 107° before death and still rising to a degree or two higher after death. Operators who have witnessed these unfortunate conditions have changed their methods so as to exclude or prevent these preoperative attacks in Graves' disease. By placing the patient under treatment as I have described, giving him such nerve sedatives as indicated and at the same time allowing the patient to inhale some aromatic at a certain time every morning. The patient is given to understand that sometime at a favorable period in the course of his treatment he will be subjected to an operation, but when this time has been selected he is not made aware, but is given a hypodermic of morphia, and instead of the aromatic inhalation at this time he is given to inhale ether, and when under the influence is brought to the operating table. This operation is usually done early in the morning. The patient awakes from the operation not knowing what happened and none the worse for the operation. Out of two hundred cases thus operated by Kocher, 85% recovered, with only 4.5% mortality. The operation in Graves' disease is much more difficult in many respects than in ordinary goitre. On account of the great vascularity of the organ and the friability of the vessels and in consequence of the inflammation the thyroid capsule is quite adherent to the gland; and in many cases the gland is brittle in itself. Much attention should be given to the blood vessels so as to control bleeding as thoroughly as possible, not to employ toxic antiseptics; in other words, prepare for as little postoperative trouble as possible. Hemorrhage is a very unfortunate complication, and often adds to the mortality in these operations. It is best, therefore, to ligate the arteries and veins as one lifts out the gland and preferably operates from above down.

Many operators advise a gentleness in the manipulation, which I believe is a good precaution to observe, since the expression of the thyroid juice might increase thyroidism after the operation. Usually the toxic symptoms are followed by improvement in uncomplicated cases within a few hours. The day following the operation there is manifest a marked restfulness with diminution of symptoms previously noted. Complete recovery with a subsidence of all these symptoms is the result of successful operative treatment. One must not forget, however, that a whole gland must never be removed. As to the amount of glandular tissue to be removed one must be guided by the symptoms present in the individual case beforehand.

Struma, or ordinary goitre, is a condition of the thyroid gland in which there is an alteration of the gland without disturbance of the general system, unless it be by a mechanical action. This condition is classified as: (1) diffuse; (2) nodular.

Diffuse goitre affects the whole gland. Nodular goitre affects only part of the gland.

Diagnosis—The goitre moves with deglutition, also moves up and down during deep respiration; coughing will also move the goitre. In diffuse goitre the shape of the normal gland may be recognized, and in the nodular form, one may note the attachment of the tumor to the normal gland. Unless the goitre is malignant, or has been fixed by inflammatory products, passive motion may be applied.

In struma profunda, or the introthoracic goitre, percussion and auscultation will give valuable aid. Over the goitre will be found increased dullness and diminished tracheal breathing. The relations of the blood vessels of the neck may also be an aid.

Symptoms—Dyspnea is often present as a mechanical symptom by reason of its pressure upon the trachea or upon the large vessels and nerve. Pressure on trachea may vary from slight depressed feeling in breathing to that of tracheal stridor; and under certain circumstances severe asphyxia may take place, due to an unfavorable position of the goitre.

Pressure upon the recurrent laryngeal, has in rare instances produced permanent hoarseness. Cyanosis caused by venous stasis chiefly observed on the face, neck and lips, pressure upon the innominate vein, may produce edema of the glottis. Pressure upon the arteries may cause vertigo. Thus dyspnea caused by the goitre throws extra work upon the heart, which caused Kocher to give the name goitre-heart. While there is a feeling pressure on swallowing, yet dysphagia is rarely severe.

Treatment—Internal treatment consists chiefly in phytolacca, iodine and iodides, but the nodular form of goitre will not yield to internal treatment nor any case of calcareous degeneration. Any case of goitre which has had a thorough course of internal treatment and does not yield, should be subjected to surgical treatment. All cases in which the goitre is painful had better be turned over to the surgeon. Any case in which the goitre is causing severe pressure symptoms should be operated.

Contraindications for Operators—All cases of severe heart lesions (the dyspnea may be due to the heart and not to the goitre) should be kept under observation. Also cases of obesity, fatty heart, liver, and in severe kidney lesions.

Operations—Operative treatment consists in excision, enucleation, resection, exenteration, and ligation of arteries.

Technic—First local or general anesthesia, as the case may require.

Contraindications for general anesthesia are tracheal stenosis, cardiac and pulmonary complications.

The incision is made transversely, usually extending from the outer border of the sternocleidomastoid of one side to the opposite; division of the platysma, ligation and division of the anterior and oblique jugular veins, splitting of the median deep fascia, spreading of the sternothyroid and sternohyoid muscles; divide the external capsule of the goitre, insert the finger underneath the incised capsule and carry it around the tumor; ligate the veins and divide, and also divide the bands, then drag the goitre forward and ligate the vessels, beginning with the superior thyroid. Divide all large vessels between two ligatures. Pull the tumor forcibly to the opposite and ligate the vessels. Isolate and divide the isthmus and the procĕssus pyramidalis. Raise the goitre upward, expose its attachment, ligate all vessels, and separate from the trachea, leaving behind a portion of the gland.

THE EDITOR GUESSED THE OUTCOME.

Senator Bailey, of Texas, was so fiercely attacked by some of his opponents the last time he was a candidate for re-election that one editor indulged in a circumstantial forecast of what would happen to him in the county convention the next day.

"He was so specific about my finish that he reminded me of a story," said the Senator. "A foremost citizen in a small town had an attack of appendicitis. The editor heard the report and hurriedly made an item of it, which he printed in this wise:

"'Our esteemed fellow citizen, James L. Brown, will go to the hospital tomorrow to be operated upon for the removal of his appendix by Dr. Jones. He will leave a wife and two children.'"

Irrigation.

By Wm. Lee Secor, M. D., Ph. D., Chicago, Ill.

IT IS, as our readers are by this time well aware, the policy of this journal to give exploitation to every mode and phase of therapy pertaining to the rational and scientific practice of medicine. In looking back over our contents, we find that hydrotherapy has not had as much representation as perhaps it should have had, and we welcome this contribution upon one of the applications of this therapeutic agent. Dr. Secor is a man of high authority and large experience in physiological therapy, and his article represents the fruit of his study and experience. His aim has been to make the treatment available to the general practitioner in the patient's home; and we recommend it to our readers in all cases where it is indicated.

An irrigation may be very similar to a douche, but usually it is applied to cavities and diseased surfaces, and the water does not strike the tissues with as much force as it does in a douche, for irrigation is usually employed to cleanse rather than to produce mechanical stimulation.

Lavage.

Lavage or irrigation of the stomach is a very useful measure in a large variety of conditions, and to be able to administer one without exciting the patient and causing him to look forward with dread and horror to the next treatment, is an art that every physician and nurse should master. When the lavage is properly administered there are but few patients that will not soon become accustomed to it and take it without a fuss.

The patient should be seated on a stool facing another chair upon which a good-sized basin is placed. A rubber apron should be so placed as to cover the whole front of the body, or a towel may be used instead. The attendant has on hand plenty of water at the desired temperature in a pitcher; one or two clean towels, and a good stomach tube, with or without a bulb, as may be preferred. The attendant takes his position back of the patient with the patient's head resting against his body. Now, with one arm passing on either side of the patient's head, the tube is introduced. The attendant talks calmly and reassuringly to the patient, requesting him to swallow, and telling him there is no danger of choking or strangulation, as there is plenty of room for the tube to pass, and all the time he keeps feeding the tube down the esophagus by gentle pressure. When the tube has been introduced to its proper length, water is slowly and carefully poured into the funnel until the stomach and the tube become full, or until the patient complains of pain, when the outer end of the tube is quickly turned down over the basin, the patient bends forward, and the water is allowed to siphon out. If the bulb tube is employed, the bulb may be used to start the flow, otherwise the tube must be full when it is turned down, in order to start the siphon.

In order to prevent the regurgitation of the tube, it should be grasped just outside of the mouth and held in place. When a patient has not taken lavage before, much of the fluid may come up around the tube, which will do no harm.

The author has found that in quite a large number of cases where it is desirable to use lavage and clean the stomach out thoroughly, the ordinary siphon or even the bulb tube is not strong enough to draw out particles of undigested foods and ropy mucus, so that

he has made a practice of removing the funnel when the siphon starts, and after the first gush, substituting an Ewald bag for the funnel. This will draw out much that the ordinary lavage would allow to remain. Before he used this method, he found that in some cases where there was a chronic condition with the formation of much thick mucus, it was necessary to resort to the emetic to properly cleanse the stomach, but with the Ewald bag the emetic is seldom necessary for this purpose. A powder consisting of three parts of bicarbonate of soda, one part of sodium sulphide, and one part of sodium chloride, of which one teaspoonful is used to the pint of water, is a great aid in cleansing the stomach by lavage.

The lavage as described is a simple irrigation. Dr. Fenton B. Turk has devised a gastric douche in which tiny jets of water, at the desired temperature, may be projected against the stomach lining with some little percussion effect. This is a valuable treatment where indicated.

A procedure which hardly comes under the head of an irrigation, yet may well be mentioned here, is one devised by Dr. Turk, and called the "Intragastric resuscitator." It was modified, somewhat, by Dr. Milton H. Mach, who taught the method to the author. This procedure consists of introducing a thin rubber bag, which has been securely fastened to the end of a double stomach tube, into the stomach through the esophagus. Now water at 125° F. is passed into the tube until the bag is fully distended, then a continuous stream of water is kept passing through the bag, and the temperature is gradually raised to 138°-135° F. This application is prolonged to half an hour. Some results are obtained that were hitherto practically impossible. In hypopepsia it is of the greatest value.

Irrigation of the Colon.

Injection of water into the colon is a measure that is employed for the production of a number of different effects, some of which are among the most valuable of hydriatic procedures.

The simple cleansing enema consists of the introduction into the lower end of the colon of plain water at from 70°-98° F. The water is introduced by the aid of some type of syringe, of which the fountain syringe is the most generally useful. Only sufficient water to produce the desired effect should be used, as nothing is gained and harm may be done by distending the walls of the colon by the use of large quantities of water under high pressure.

The patient takes the right Sims' position, the rectal point is lubricated, and after all air has been expelled from the tubing by letting the water run, it is introduced, with the siphon syringe elevated about two feet above the patient. The water is allowed to flow slowly and gradually; if the patient complains of pain the flow is stopped for a moment and may then usually be again continued until the desired amount is introduced, which is generally made known by the patient announcing that he is unable to retain more. He is then allowed to evacuate the bowels, and if the desired effect is not obtained, a second injection may be given. Water at 70° F. will usually produce better results than if given at 90°-98° F. When warm water is used for the enema, it should be followed by a small amount of cold water, which should be introduced and retained for its tonic effect. A little soapsuds added to the enema water will make it more effective, and if there is much flatus, turpentine makes a very valuable addition.

The Cold Enema.

This is one of our most valuable hydriatic procedures for the management of a febrile case. The effect of the cold upon the mucous membrane of the bowel

is not simply to lower the temperature of the body by the abstraction of heat, but all of the emunctories are stimulated to increased activity, and there is an increased output of toxins.

A good method to employ where it is desirable not to disturb the patient, is the use of a two-way tube, so that a continuous stream may be kept flowing. Ordinarily, water at 70° F. will give the desired results, but the author has used—in a few cases of hyperpyrexia in robust subjects—water at 40° F. with excellent results.

The short, cold enema is an indicated measure in any atonic condition of the lower bowel or rectum, and is often very effectual in relieving constipation.

The Hot Enema.

In the hot enema we have an agent of marked usefulness, for it has been used successfully in treating inflammations of the pelvic viscera, in the treatment of infantile colic and diarrheas, and for combating collapse in typhoid and other fevers. It is also one of the most valuable agents in the management of surgical shock. The temperature should be 110°-120° F., or even 130° F.

The Coloclyster, or High Enema.

In this procedure a bowel catheter is used, and the water is introduced so that it reaches a much larger surface of the colon, in fact the whole colon may be filled, if desired, which is seldom, if ever necessary.

In some cases of neurasthenia, due to autointoxication, where there is much resorption of toxins from the colon, the coloclyster gives most excellent results, and in many chronic cases, where the walls of the colon have lost tone and fecal matter is allowed to accumulate, enormous quantities may be washed out and very great relief will follow. In these cases it must be continued regularly for several weeks, while other measures are employed to restore the tone to the colonic walls.

Irrigation of the Bladder.

In this procedure a soft rubber catheter is introduced into the bladder in the usual way. The outer end of this is connected to the rubber tube of a fountain syringe by a glass tube shaped like a medicine dropper. The water is allowed to run to remove all air from the tube, then the small end of the glass tube is introduced into the outer end of the catheter, and the water is allowed to flow. When the patient complains of fullness and pain, the glass connector is withdrawn from the catheter and the water siphons out of the bladder. This may be repeated as many times as necessary.

Some prefer the Y-shaped glass connection with both a delivery and waste tube. The temperature of the water should be 104°-106° F., and various medicinal agents may be added when indicated, as boric acid, potassium permanganate, etc.

There are so many conflicting opinions as to the best method and proper indications for irrigations of the urethra that it is not deemed best to consider the matter here, but the reader is referred to special works on the diseases of the genito-urinary organs.

Vaginal Irrigation.

Vaginal irrigation is commonly known as the vaginal douche, and it has been used for a long time with a high degree of success in the treatment of disease of the pelvic viscera.

The patient should always lie on the back with the hips elevated slightly, and so arranged that the water flowing from the vagina will be received in a suitable receptacle without wetting the clothing. For institutional work a regular douche table is necessary, but in the home where there is a bath-tub, a table may be very readily improvised by laying board strips across the tub for the patient to lie on, leaving a space for the buttocks to project through, the water flowing out of

the vagina will then fall into the tub without wetting the clothing. In homes where there is no bath-tub, the author has made use of an ironing board placed across chairs, and having the patient lie so that the buttocks project over the end. The water supply should be from a fountain syringe and the tip that is introduced into the vagina should be large and of hard rubber or glass. It should be so introduced that the tip is placed well behind the cervix. For most of the conditions in which vaginal irrigation is indicated the water should be as hot as can be borne by the patient, and taken in large quantities (six to ten quarts). In some cases, however, different temperatures are employed.

The prolonged hot irrigation is of great value in relieving pain, in promoting vascular activity in cellulitis, metritis, salpingitis and oöpharitis. The addition of a little common salt to the water enhances its value, and when there is marked relaxation of the vaginal walls, alum may also be added with profit.

Moist Air Inhalation.

A method which the author has very often employed with excellent results in croup, acute bronchitis and acute inflammation of the post-nasal region and pharynx, is to combine the vapors from the compound tincture of benzoin with the steam-heated watery vapor. A very simple method is to take a teacup that has a few pebbles or some weight in the bottom, in a tin pail; a few drops of the compound tincture of benzoin are now put in the teacup and boiling water is poured into the pail outside of the teacup until it almost reaches the top of the cup, or the cup begins to float. A large sheet of heavy paper has previously been rolled into a cone, the large end of which is now placed over the pail and the patient inhales the vapors at the small end. When it is desired to prolong the inhalation, the boiling water may be added a little at a time, or the tin pail may be placed over a small oil or gas stove. By leaving out the cup and benzoin, the plain watery vapor may be inhaled, or other medicaments may be added as desired.

TREATMENT OF GONORRHEA.

Schindler treats anterior gonorrhea with injections of 3 to 5% protargol, posterior gonorrhea with injections of ¼% protargol, to which some cocaine nitrate has been added. Of the latter, one to three syringes are used once or twice daily by the patient himself and the fluid is retained in the bladder as long as possible. An important part of the treatment is the use of atropine, preferably in the form of suppositories (1 milligram two or three times a day). Complications such as epididymitis have never been seen by this method of treatment. In some cases, the gonococci will not disappear, even if a stronger solution of protargol is employed; here Janet's irrigations or dilatation will not always cure. In such cases the protargol should be incorporated in a sufficiently diluted vehicle so that the drug comes into more intimate contact with the walls of the urethra. The following prescription is highly recommended:

Agar sterilizat. (2.5%).....	40.0 grams.
Aq. dest.....	160.0 c.c.
Protargol	1.0 gram.

The agar is liquefied and diluted with the water; after cooling, the protargol is then incorporated. The author writes that it is important that Merck's agar be employed, for, in this way, a sterile solution is assured. The consistency of the resulting solution is such that it can readily be injected with the ordinary gonorrhea syringe. It will dilate the urethra more thoroughly than the aqueous solution and a thin layer will remain in contact with the parts for a long time, so that a prolonged action is possible. This method of treatment is also excellent in the vulvovaginitis of children, where it may to advantage be combined with vaccines.

Non-Operative Treatment of Diseases of Women.

By Alfred De Roulet, B. S., M. D., Chicago, Ill.

THERE can be no question that, of all the branches of medicine in which the surgical mania has been rampant in the last twenty-five years, gynecology has suffered the most from its excesses. We are disposed to think that within the last few years there have been marked indications of a reassuring return to sanity and conservatism in this respect. However, the author of this article apparently thinks that there is still much room for reform—in which opinion, in the main, we agree with him. We therefore gladly publish his protest against surgery-gone-mad, and his plea for a rehabilitation of medical gynecology in its proper place—all the more gladly because his article is a constructive one, and points out the practical steps in the needed reform.

After reviewing a number of the more recent text-books and looking over the current literature on the subject, as well as listening to papers and discussions in our various medical societies, we might infer, from the amount of time and attention devoted to the surgical treatment of diseases of women that medical measures had no place in the practice of an up-to-date gynecologist. In fact, some of our distinguished operators declare that medical gynecology is but a figment of the imagination and that any line of treatment other than operative is but the merest tinkering. It is hardly necessary to add that such men merely advertise their own ignorance of the resources of modern therapeutics.

Without attempting to underrate the importance of surgery in properly selected cases, I am convinced that the field of medical gynecology is not only a large one, but also one well worth cultivating.

In gynecology as in every other department of medicine, there are conditions which are only amenable to operation, but because brilliant results have been attained in this rather limited class of cases, it is scarcely reasonable to insist that operation is the only or even the best treatment for all diseases of women. At best an operation is but the lesser of two evils, never an unmixed blessing. In any given case, after the patient's condition has been considered in its broadest aspect, medical as well as surgical, if an operation does not seem to be the only treatment compatible with the patient's best interests, it is not only not to be advised, but is positively to be advised against. There can be no question as to the necessity for operation in the treatment of malignant tumors, and certain inflammatory conditions, but in the case of uterine displacements, and the various chronic inflammations and congestions of the pelvic organs, the need for operation is decidedly questionable.

The Surgical Craze.

A few years ago our greatest surgeons and gynecologists operated for uterine displacements on every possible occasion, and our medical journals were filled with reports of "One Hundred Ventral Fixations," "Two Hundred Ventral Suspensions," "Three Hundred Alexander Operations," or "Five Hundred Successful Operations for Retrodisplacements of the Uterus." Now the value of an operation is questioned even by the surgeons. Probably one-third of all uterine dis-

placements are unaccompanied by symptoms of any kind and when unpleasant symptoms are present, operative measures can not be depended upon to afford relief. Time and time again has the uterus been suspended or the round ligaments shortened, and when the patient recovers from the operation she has just as much backache and suffers just as acutely as before. The condition has undoubtedly been cured anatomically, but the anatomical cure of a condition which neither endangers, nor is likely to endanger, life is of very little value when the functional disturbances are not relieved.

To accomplish anything in medical gynecology, it is essential that the gynecologist has a clear conception, not only of the condition confronting him, but of what he intends to accomplish and the means by which he intends to do it. Each case must be studied individually and the patient as well as the disease must be considered. Routine work has no place in medical gynecology and the gynecologist who "guesses the patient has a little catarrh of the womb," and "guesses that maybe a little iodine will fix it up all right," has certainly mistaken his calling.

Many gynecological affections are not amenable to local treatment alone, and constitutional treatment alone is often but little more effective, but by a judicious combination of the two much may be accomplished. As most gynecologic patients are anemic, constipated and nervous, particular attention should be paid to their diet. They should be encouraged to eat freely of all kinds of nourishing food, particularly meat, as beef, mutton, and poultry, eggs, oatmeal, whole wheat and corn bread, fresh vegetables, and fresh fruit. The various patent breakfast foods and cereal coffees have not sufficient food value to pay for the trouble of eating them. Milk should be used freely, especially between meals and at bedtime. Condiments, as the various spices, are beneficial when used in moderation, as they stimulate digestion and absorption. Sweets and pastries should be avoided. Many patients will object to this diet on the ground that they have no appetite. In such cases continue the diet and let the appetite take care of itself. Few American women take sufficient quantities of proper food, although many eat an excess of food which is neither digestible nor nourishing.

Tonics are usually indicated, especially iron, arsenic, strychnine, phosphorus and hydrastis. Laxatives are frequently necessary, and for this purpose a reliable cascara preparation is probably the most satisfactory.

Hydrotherapy.

Hydrotherapy in gynecology is practically unknown outside a few sanitaria and hydropathic institutes, yet in many cases it may be employed with excellent results. The successful application of hydrotherapy depends upon a thorough knowledge of the effects of heat and cold on the body as well as on strict attention to the correct technique of the treatment.

The hot vaginal douche is probably the most frequently employed of the hydriatic measures, and, when properly applied, is undoubtedly one of the most valuable therapeutic agents which we possess for the relief of pelvic pain, the control of inflammation or the absorption of inflammatory exudates. When improperly used, as it generally is when employed by the patient herself, it is practically worthless. The injection of small or moderate quantities of tepid water into the vagina may have some slight cleansing effect, but that is all. It certainly does not affect in the slightest degree an inflammatory process.

The douche is undoubtedly the most effective when administered with the patient lying down with the hips slightly elevated, though the sitting posture is permissible if other conditions are carried out. The essential point is the pro-

longed application of a large quantity of hot water to the entire vaginal surface. The water should be used at a temperature of from 105° F. to 120° F., and should be in contact with the tissues from twenty to thirty minutes, consequently several gallons of water may be necessary. The douche is best administered with a fountain syringe at an elevation of from two to four feet above the patient. The soft rubber tube, having been sterilized and lubricated, is introduced well into the vagina. The hard rubber tips present no advantages over the tubing itself and are much harder to keep clean, while with the tips there is always the possibility that some of the fluid may be introduced into the uterine cavity and set up a very unpleasant uterine colic.

As the object of the douche is to combat inflammation and stimulate absorption of inflammatory exudates, plain hot water is best, though in some cases common salt, borax, or boracic acid may be added with advantage. If for any reason an antiseptic solution is desired, a 1:200 solution of lysol is safe, efficient and free from unpleasant features.

Hot rectal injections may be used for practically the same purposes as the hot vaginal douche, but their employment for any prolonged period of time is not advisable.

Hot water introduced into the rectum is brought into closer contact with the uterus and appendages than is possible in any other way. The injections are made twice or three times each day, the water being used at a temperature of 110° F. and retained as long as possible. In addition to its effect on the inflammatory conditions, the hot rectal injections are also valuable in rendering the lower bowel comparatively aseptic and relieving the constipation to which a majority of women are subject.

Colonic lavage—Inasmuch as I am inclined to consider chronic constipation an important factor in the causation of pelvic congestions, I place a rather high estimate on the value of colonic lavage. According to our present knowledge the colon contains, in addition to considerable quantities of the waste products of digestion, enormous quantities of putrefactive bacteria which produce certain toxines which are taken up by the circulation. In early life, when the patient's powers of resistance are at their height, the effects of this toxemia are slight, being limited to an occasional sick headache, but with advancing years there is a progressively decreasing resistance, and the symptoms of a chronic copremia become more pronounced.

While the effects of the lavage on the pelvic circulation are even more marked than those of the hot rectal injections, the object of the colonic lavage is primarily to flush out the entire colon, removing mechanically the entire accumulation of putrefactive material, and as the greatest accumulation of putrefactive bacteria is found in the head of the colon, unless this portion of the bowel is reached, satisfactory results can not be attained.

The correct technique is the simplest. A common two-quart douche bag fitted with ordinary rubber tubing and a small hard-rubber tip is all the apparatus necessary, and in practice will be found much more satisfactory than the soft-rubber high enema tubes or the more complicated apparatus devised for that purpose. The douche bag is filled with hot saline solution (110° F.) and the patient placed in the knee-chest position. In this position the rectum is higher than the colon and the solution gravitates through the sigmoid flexure into the descending and transverse colon. As the rectum begins to distend there is a strong desire to expel its contents, but this impulse being resisted, in a moment or two a slight gurgling is heard and the solution flows into the colon. When the bag is empty the rectal tip is withdrawn and the patient turns on her

right side to allow the solution to flow into the ascending colon, after which the bowel may be evacuated.

The hot sits bath is used principally for the relief of pelvic pain and is of great value in restoring the menstrual function in cases of acute suppression, especially when due to exposure to cold or dampness. In giving this bath the patient should be placed in a tub with the water at a temperature of 100° F., after which hot water is added until a maximum temperature of 110 to 115° F. is reached, the patient remaining in the bath from fifteen to twenty minutes. Where the bath is employed for the relief of acute visceral congestions, care must be taken to prevent the sudden cooling of the body surface, as the sudden general contraction of the superficial vessels would simply aggravate the congestion and destroy any good effects of the bath.

Exercise.

Exercise, especially the military setting-up exercises, will often prove a useful adjunct in the treatment of certain pelvic troubles. In early womanhood the abdominal muscles are generally fairly well developed and the abdominal walls firm and elastic; with advancing years the muscles become atrophied from disuse or weakened or relaxed from over-distension, the abdomen becomes pendulous, the abdominal and pelvic organs, no longer receiving their proper support, become more or less displaced or distorted, and marked circulatory disturbances soon follow. In my opinion the evil effects popularly attributed to tight lacing are due, not to the compression of the abdominal and pelvic contents, but to the enforced disuse and consequent weakening of the abodminal muscles.

Local Treatment.

The value of local treatment is often underestimated, but even in cases where an operation would seem to be indicated much may be done by systematic local treatment, not only to give the patient relief sufficient to enable her to continue her ordinary duties without discomfort, but even to bring about permanent cure. Under the head of local treatment may be considered the various topical applications, pessaries, pelvic massage and electricity.

Vaginal tampons are used as carriers of medicines, as mechanical supports for the uterus, and for control of hemorrhage. As carriers of medicinal substances the best tampons consist of a roll of sterilized lamb's wool, one inch in diameter and about three inches long, bound about the middle with a narrow tape, one end of which is left about six inches long. This tampon is saturated with the desired drug and introduced into the posterior vaginal fornix. Various remedies may be employed, but I have found pure glycerin, boroglyceride and icthyol the most generally used. All relieve pain and congestion to a greater or less extent. Where a local astringent is desired the tampon may be saturated with a fluid extract of hydrastis or the distilled extract of witch hazel.

When used as a mechanical support the tampons should be introduced dry in such a manner as to form a column in the vagina. In such cases it is advisable to dust the tampons with some mildly antiseptic powder, as boric acid or stearate of zinc and acetanilid before introduction into the vagina. Tampons may be used in this manner in the gradual correction of retrodisplacements and for the support of a prolapsed uterus.

POOR FATHER.

Effie—Shall I put on my mackintosh and run out and post this letter, mother?

Mother—No, dear; it's not fit for a dog to be out on a night like this. Let your father post it!

CURRENT MEDICAL LITERATURE.

TREATMENT OF UNDESCENDED TESTICLE.

DR. WARREN L. DUFFIELD is of the opinion that the simplest and best operation for the correction of this condition is the one described by Bevan. In the *Long Island Medical Journal* he says that this operation may be performed after the child has passed the third year, though Bevan elects the time between the tenth and twelfth years. The technic is as follows:

An incision is made three inches long over the inguinal canal and through the aponeurosis of the external oblique. Under the external oblique will be found a pouch of peritoneum extending from the abdominal peritoneum through the canal and down to the scrotum. This pouch of peritoneum is covered by the cremasteric muscle and fascia and the transversalis fascia. These three layers are divided and the peritoneal pouch opened. The vaginal process of peritoneum should be divided transversely well above the testicle. Care should be taken not to injure the cord, and in children, where the peritoneal process is as delicate as tissue paper, the dissection must be made with great care and with small instruments. After complete transverse division of the vaginal process the upper end is closed with a catgut ligature, as in the sac in a hernia operation, and the lower end is closed with a purse-string suture, making a tunica vaginalis for the testis. Then, with a gauze sponge, the peritoneum is carefully wiped off from the cord. As the wiping proceeds the cord will gradually lengthen until the testicle can be brought well down upon the thigh. Tense, fibrous strands in the cord are to be torn either with the fingers or blunt dissecting forceps and the cord is to be freed from everything except the vas and vessels. When, as in the exceptional case, a large peritoneal pouch extends to the bottom of the scrotum, the testicle can now be pushed into this and retained by a purse-string suture within the neck of the scrotum. As a rule, however, it is necessary to make a cavity by blunt dissection with the fingers.

"In a few cases—but these will be quite the exception—it is found, even after the free exposure of the cord, that it is not long enough to permit of the reduction well into the scrotum. In such cases it will be seen that the shortened structures are the spermatic artery and veins. These can be divided between two ligatures, care being taken to avoid injury to the vas and the vessels of the vas. It will then be found that the testicle can by gentle traction be brought down sufficiently to replace it in the scrotum without tension. It will be found that the artery of the vas and the veins of the vas are quite sufficient to supply the entire testicle after the ligation of the spermatic artery and anterior group of veins."—(Bevan.) This statement of Bevan's, apropos of the blood supply, has been borne out by Moschcowitz in a series of some twenty cases. Personally, in the few cases I wish to report, I have not found it necessary to ligate and divide the vessels.

THE TREATMENT OF LEUCORRHEA.

Dr. Abbie G. Hinckley gives the following pertinent suggestions for the treatment of leucorrhea in a recent number of the *Woman's Medical Journal:*

In the acute form, removal of the cause, where possible, is the first step, thus reducing the inflammation. A rest in bed is strongly advised. Bowels are to be relieved by the use of laxative salines.

Diet, while light, should be nourishing. A free drinking of hot water at stated intervals is recommended, since this promotes digestion, the free flow of urine, and acts as a stimulant. Opiates should be avoided if possible; an asafetida suppository, inserted into the rectum, often proves sufficient to relieve the pain and has no unpleasant results.

Cleanliness must be enforced. To accomplish this, and destroy the germs, an antiseptic douche should be given three times daily while in bed; later, twice daily will do. One of the best douches is a solution of corrosive sublimate (1 to 4000), followed by a quart of normal salt solution, and given as hot as can be borne with comfort.

Tampons saturated with icthyol and glycerin are much used to reduce the acute inflammation, or tampons saturated with argyrol (25%), placed in the vagina after the douche, have proved effective. As a tampon often proves an irritant, the best plan is to place the patient in the knee-chest position, and with a Sims' speculum in place, apply the argyrol solution directly to the surface.

In the chronic form of leucorrhea the patient should receive treatment that will build her up constitutionally. Advise all the sunshine and fresh air possible, with a moderate amount of exercise; also, good, nourishing diet, watching to avoid all foods that cause fermentation and flatulence. Correct any constipation, for that and fermentation are factors that must not be overlooked in the successful treatment of women's diseases. The same local treatment will be followed for the first week, as advised in the acute form; then, when the inflammation is gone and the discharge is lessened, astringent injections are substituted and direct applications of silver nitrate, 20 to 40 grains to the ounce, are made.

A hot salt solution is best taken at night on retiring, carefully avoiding any chill. For the morning douche, boric acid is good. Suppositories of hydrastis, or those of iron and opium, restore the relaxed tissue.

Gonorrheal vaginitis is treated much the same as the simple variety, but the prognosis must be guarded; no patient should be considered cured until repeated microscopic tests show no gonococci. Then there may be a doubt, if the claim that only 70% are cured is true.

In conclusion: The acute form of vaginitis is treated by rest and with antiseptic applications; it is a fact, however, that almost all acute cases have a chronic stage that is often very stubborn, and it is for the relief and cure of this group that this paper is intended. In chronic cases expose the vaginal surfaces, and paint with 25% argyrol in glycerin every four days for four to six treatments, and, if not then cured, apply in the same manner as solution of silver nitrate, 20 to 40 grains to the ounce, and you will cure every case not fed by a diseased uterus or adnexa. Such cases require operation.

AMEBIC DYSENTERY.

Julius C. Davis, Jr., in the *Medical Review*, says we can be positive of a diagnosis by the aid of the microscopic findings, and the examination may then have to be repeated a number of times before we find the trouble. If you fail to find the ameba, do not make a negative diagnosis until you try a number of times. The specimen should be fresh and about body temperature for examination. Specimens should be secured after a saline laxative has been administered, as this will distend the bowel and have a tendency to cause the entameba to lose its grip on the intestinal mucosa.

The slow development of symptoms may exist over a great period of time before any acute manifestations of the disease are present that would make us even suspicion that such a condition was existing. It usually begins as a moder-

ate diarrhea, the stools voluminous and of a bilious nature, at first being mucous in character, gradually becoming bloody and liquid and containing necrotic tissue and pus.

Tenesmus is not marked and the stools rarely exceed fifteen per day. Fever, if present, is of a low, irregular type. Tenderness over the bowels is generally absent. A very prominent symptom, however, rarely made mention of, is a very severe proctitis that is very resistant to any treatment except the quinine enemata, but will yield to this very promptly.

The complexion is a sallow, muddy color, and anemia of the chlorotic type is present in the majority of cases, and is present a long time before any dysenteric symptoms are manifested, due to the poisonous products of the infection which seems to be dormant. However, this is not a dormant condition, as the poison is being accumulated in the system all the while, possibly the liver retaining more of the toxic product than any other organ, thus accounting for the frequency of a liver abscess complication.

The patient may apparently be in good health for a period of several months after an attack, while the infection is still present and the patient succumbs to a subsequent attack.

Tenderness over the cecal and sigmoid region and slight pain in the same area are usually present. Vomiting and nausea are not commonly present, but I have seen it existing in some cases very severely, and at the time of bowel movement and while enemata are being administered.

The treatment of intestinal amebiasis may be divided into the prophylaxis, and the dysenteric and hepatic manifestations. Local treatment, however, is the most important measure we have to deal with.

The prophylactic treatment is the same as that of typhoid, as the mode of infection is almost invariably through the ingestion of water or food products containing ameba. Although amebas are found in many places, their principal and original source is the water. The only safe rule to adopt is to introduce into the alimentary canal no food or drink which has not been thoroughly sterilized by heat. Natural immunity exists, but is not to be depended on: as there is no way of determining who these individuals are or of measuring their immunity.

Medicinal measures through the mouth do no good except as supportive treatment, with but one exception, *i. e.*, ipecac: it should be administered in doses of from 10 to 15 grains once or twice every twenty-four hours for the first few days and afterwards every second or third day, and should be given in pill form made by coating with salol and hardening with ether as described in the U. S. P. This is done in order that the drug will not be absorbed during its stay in the stomach and avoid the vomiting and nausea that would otherwise be encountered. The salol-coated pill as described will only be absorbed after reaching the intestinal canal, after the succus entericus has come in contact with the coating, and then the ipecac will come in direct contact with the infected part of the gut. Ipecac also should be given in solution by the rectal route.

The most important and about the only treatment attended by results and worth considering, is the quinine hydrochloride in a solution of 1:1000 to 1:3000 given per rectum twice daily. The quinine being a protoplasmic poison and coming in direct contact with the ameba, destroys and inhibits the growth and proliferation of the ameba. This is the only thing that will control the severe proctitis and check the frequent number of stools. Opiates have no place and are contraindicated. Alcohol is very useful and is often indicated as a stimulant, and should be given in the form of

brandy, wine, or champagne. Strychnine, nuclein, protonuclein, or triple arsenites with nuclein act well as a restorative and supportive.

Saline laxatives should be given daily, as they distend the bowel and have a tendency to dislodge and expose to the action of quinine and ipecac solutions many amebas which are imbedded in mucus and feces in the colon. Pepsin and acids for aiding gastric digestion, salol for the prevention of intestinal fermentation, and iron for the anemia, are useful in every case. The use of bismuth and other insoluble drugs is not advisable and do no good.

Suppositories of cocain may be necessary for the irritability of the rectum and anus.

Good, nourishing food every three or four hours of a semi-solid or liquid nature is of paramount importance and must be insisted on.

Remember, the main treatment is the quinine and ipecac solution by the rectum and the ipecac put up in the salol-coated pill, and this will give you results.

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SURGICAL OPERATIONS IN HOT WEATHER.

Theoretically, says Robert Morris, in *American Medicine,* surgical operations are best borne during the cooler months of the year, when less of the patient's potential energy is required for resisting the influence of hot weather. Practically, the law of compensation seems to come to our aid in giving during the summer months a greater amount of fresh air from the open windows. This sounds a bit superficial to one who is fond of statements more scientific in character, but hospital records would seem to indicate that the patient's chances of recovery from major surgical work are about as good at one time of the year as at another.

The idea that patients make better recovery during the cooler months has been fostered unconsciously perhaps by surgeons who look forward to their summer vacation, and time for experimental work and library work without interruption. Perhaps patients will do better on the whole at the time of the year when the surgeon thinks they will do better, for we then have the potent influence of suggestion. I would not care to set sail on Friday on a sailing craft; not because I have any superstition in the matter, but because the sailors, feeling sure that something will happen, suggest accident so strongly that a real menace is introduced arbitrarily and the sailors are not as alert in avoiding accident as they are when each one believes that the inwards are auspicious for the voyage.

On one occasion I had to return to my hospital work rather early in September because a number of doctors and members of doctors' families were awaiting operation. A number of these were operated upon during the first forty-eight hours, and we then had a blaze of torrid, humid weather, with the temperature ranging about one hundred in the hospital rooms in the middle of the day, and with exhausting nights. There were a number of abdominal operations in the series, but all the patients did remarkably well; in fact, it seemed to me unusually well. The experience on that one occasion has done much to confirm my belief that operative cases may be conducted about as well during the heated season as during the more temperate days.

My personal feeling is that the argument against operative work in hot weather relates to the surgeon rather than to the patient. This, however, is a really serious matter, and not to be taken jocularly. The responsibilities of the surgeon are so great that ample time for rest should really be taken, on the ground stated by Daniel Webster that "a man could do a year's work in ten months—but not in twelve."

TECHNIQUE OF SUPRAPUBIC PROSTATECTOMY.

McKinnon, in the *Medical Council,* gives the following technique:

1. Make the incision through the skin and superficial fascia, and, with handle of knife, separate muscles and insert tip of left index finger, and push it down behind the symphysis.

2. Have assistant turn water into the bladder; as the bladder distends pull up the prevesical fat and peritoneum.

3. Distend the bladder only just enough to feel its upper surface with left index finger.

4. Make puncture through the bladder and introduce the left index finger.

5. Introduce one or two fingers of the *right* hand into the rectum, and push up the prostate.

6. Insert the *left* index finger into the prostatic urethra, and it is but the work of a moment to break through gland and enucleate it from its capsule. The gland is delivered with tenaculum forceps.

7. Introduce iodoform gauze, packing it into the place from which the prostate was removed. The interior of the bladder may be filled with it if necessary in badly infected cases.

8. Do not sew the bladder to the abdominal walls; they get along as well without it, and it saves time to omit suturing.

9. The gauze packing acts as a capillary drain, and also prevents hemorrhage and urinary infiltration.

10. The gauze is removed in four or five days and, after its removal, the bladder should be washed once or twice a day.

11. The wound in the bladder generally closes in ten to fifteen days.

12. Patient may sit up whenever he feels like it. There are two points in suprapubic prostatectomy that puts the operation on as firm a basis as any other classical operation:

The first is to make the opening in the bladder high up, and you do away with the possibility of a fistula remaining; the second is packing with iodoform gauze. This acts as a perfect drain, prevents hemorrhage and also urinary infiltration.

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A SIMPLIFIED METHOD IN TREATING FLATFOOT.

Judson, in the *Medical Council,* gives the following rules of management:

1. Advise the patient that, as a rule, the only use of the uppers in a shoe is to keep the leather sole under the foot, according to the old saying that to a man with shoes it is the same as if the world were covered with leather. Therefore prescribe a wide and flexible sole, with slight if any elevation under the heel, and let the uppers simply retain the foot without making much pressure along the sides or over the instep. Soles and uppers should be made comfortable and convenient with not too much regard for fashion or the exigencies of the trade.

2. Advise him that the arch of the foot is flexible and sustained by the dynamic action of the great muscles of the calf rather than by the static resistance of the ligaments of the foot, and that as the tendons have the difficult task of changing from the vertical to the horizontal direction on their way to the anterior part of the foot, they should never be hindered by artificial constriction above the ankle. Prescribe, therefore, either very loose laces or low shoes, with the warning that walking will necessarily be painful for a time after the ankles and feet are released from compression, to be followed later by comfort and increased ability. Note: It is difficult to conceive of the weight of the body as sustained alone by the balance of forces in so small an arch composed of bone and ligament.

3. Advise him that, of all the parts of the body, the feet are the hardest worked, and the most sure to wear out. Therefore prescribe frequent rest for the feet.

ABDOMINAL PAIN.

C. P. Thomas, in the *Medical Era*, states that pain serves the same purpose to the surgeon that the buoy at anchor does to the sailor—warning him of existing danger; and it should be no more removed without knowing its cause and significance than should the buoy, leaving undisturbed the danger-place it marks. It might also be compared to the sound of distant thunder, which of itself is free from danger, but warns us of the approaching storm.

We may with safety say that all acute, serious, intra-abdominal troubles begin with pain, and when the attack is primary it will usually first be referred to the solar plexus, but it will soon locate itself in the affected region, and by careful observation of the location and variety of the pain we should be able with reasonable certainty to determine its cause.

When a physician is called to the bedside of a patient suffering intensely, it may require a little courage to sit calmly down and proceed to locate the origin of the pain, instead of immediately administering a dose of morphine, but that, nevertheless, is his plain duty. By calmly and firmly quieting the anxiety of the patient and sympathizing friends, it is easier, then, to get an accurate history of the origin of the troubles than later, particularly if in the meantime the senses of the patient have been more or less benumbed by an opiate.

It is well known by the profession that pain is soon forgotten, or at least so far as pertains to its severity. This may be demonstrated by talking to the mother of several children, who will almost invariably describe the pains of her last labor, if at all recent, as being most severe.

She will also declare during labor that she will never under any circumstances give birth to another, but in a few years she may be found as anxious as ever for a repetition of that which she had so earnestly sworn should never occur again. While this may be a wise provision of nature, and as it should be, it prevents the surgeon to a considerable extent from obtaining a satisfactory history of the location of the pain in former attacks.

The average layman describes all pain occurring between the pubes and ensiform cartilage as being in the stomach, and since, as suggested before, the solar plexus, from which all intraperitoneal organs receive their nerve supply, is located just below and posterior to the stomach, we must expect the first pain of infection or injury to any of these organs to be referred to that region. Careful examination of the patient, however, during the attack will nearly always show increased tenderness and rigidity over the seat of the trouble.

There are three chief sources of abdominal pain: pelvic, gastrohepatic, and appendiceal. In women the pelvic region is the most common source, but those originating there are more or less distinct in character, and by careful bi-manual examination we are usually able to discover the cause or at least enough evidence to warrant us in advising the right treatment.

Pains in the pelvis are more easily located by the patient, and, except in the case of ruptured tubal pregnancy, often originate and remain there, not being referred to the stomach region. In this latter condition there is usually the history of one or more missed or partially missed menstrual periods, followed later by hemorrhage, with passage of membranes resembling miscarriage; with a well-defined, boggy tubal mass, if it is not yet ruptured; or, if ruptured, there will be general abdominal distention and a feeling of fullness on vaginal examination all around the uterus, which organ will be freely movable except for the general increased intra-abdominal pressure.

These patients show acute anemia, shock and exhaustion, from which apparent recovery takes place, only to be followed in a short time by another and more severe attack. We also expect to find the temperature normal or subnormal, whereas in all inflammatory conditions of the uterine adnexa, we expect elevation with characteristic septic variations.

The pulse rate will be high in both conditions, but will be much weaker when due to hemorrhage than to sepsis.

TREATMENT OF CHANCROIDS.

R. M. Tole, in the *New York Medical Journal,* points out that in treating chancroids, as in treating anything else, the object desired is a pleasant and speedy cure. The books on genito-urinary diseases, though quite voluminous, do not deal satisfactorily with this particular part of their subject. Too many remedies are mentioned and their too frequent use is advised, and too much treatment is worse than no treatment at all. One author states that "a chancroid is best treated by a local hot bath two or three times daily, followed by a careful cleansing with an antiseptic solution." Such a procedure is neither practical nor convenient, even were it necessary—which it is not. But this is not all. Let us read further: "Absorbent cotton wet with some lotion may be held in place by a bandage. In this case the dressing should be moistened without removing it, every hour or two, to facilitate discharge." There may be some individuals with sufficient time on their hands to be treated in this manner, but the vast majority desire and require a much more simple method. Too frequent washing of the chancroid is neither desirable nor necessary.

Next we come to the dusting powders. Iodoform, formerly the standby, because of its odor is now *passé*. Some derivative of it has taken its place. All dusting powders should be *passé* in the treatment of chancroid. They mix with the secretion of the chancroid, producing in a short time a hard, caked mass, which prevents the formation of granulations and produces considerable pain and trauma in its removal. For similar reasons dressings, unless they can be kept constantly wet, which is almost impossible, are not advisable.

Now as regards caustics. Some contend that strong caustics are never advisable, others recommend their use when the ulcer has become of long standing and sluggish. The choice is fuming nitric acid. This caustic is rather too strong, and is apt to destroy considerable tissue, bringing about an inflammatory reaction with the production of enough swelling and edema to cause a phimosis. The pain of caustics is entirely obviated by the previous application of a 4% solution of cocaine.

Lydston asserts for cocaine a healing value aside from its anesthetic property in the treatment of chancroids. He rubs into the ulcer one-quarter or one-half grain tablet with a moist swab, and says that in a few minutes this transforms the ulcer into a vascular healthy surface exuding a bloody serum. But aside from this action, cocaine is of undoubted value in the treatment of chancroids, if only for its anesthetic effect.

To review: If too frequent washing is impracticable; if dusting powders and dressings are conducive to damage; and if strong caustics are harmful—what then? After trying all the foregoing methods of treatment severally and together with constantly unsatisfactory results, the following very simple line of procedure was evolved: Wash the ulcer with a 1 to 1,000 bichloride solution and dry thoroughly with a cotton swab. Apply a drop of 4% cocaine solution. After a minute touch up the raw surface with pure phenol and follow in ten seconds with alcohol. That is all. No powders or dressings of any kind are required. Instruct the patient to return in

three days. It is astonishing how much improved the ulcer will be. The raw area will be smaller and shallower and surrounded by sloping, healthy skin—giving it the appearance of a miniature crater at the top of a miniature volcano. Repeat the same treatment to the raw surface remaining, and continue so every three days until the ulcer is entirely healed. This will occur after five or six treatments, without leaving a sign of any previous infection at that spot.

NURSING BY PUERPERAL WOMEN.

Franz, in *Berl. klin. Woch.*, says that there is no such thing as a physiological inability of a healthy mother to nurse her child. The writer says that it lies with the general practitioner to bring about such a state of mind in his patients that they shall wish to nurse their children. Formerly the doctor believed that some women could not nurse their children, but he has changed his position with experience, and by judicious advice he has been able to induce all the women in his hospital service to perform this duty. The writer's method of treatment of all lying-in women is given. He says that the child should be placed at the breast within twenty hours after delivery, since its attempt at nursing hasten the appearance of milk in the breasts. The child is placed at one breast at a time for twenty minutes. The child is nursed five times daily. From 10 p. m. to 6 a. m. the mother has rest. No drawing out or manipulation of the nipples during pregnancy is necessary, and no applications are made, nor is the child's mouth washed out before nursing. A clean garment covering the nipple is sufficient protection. At each nursing the breast should be emptied; milk left in the breast will harden and give trouble. The women get up on the fifth day and this helps appetite and general condition, which increases the supply of milk. We can not expect good milk if we give the mother a low diet. He allows his patients to eat anything they desire from the first day after labor. Puerperal infection, cancer, and pulmonary tuberculosis contraindicate suckling.

TREATMENT OF ANOSMIA.

H. Bourgeois, in *Progrès médical*, states that the loss of the sense of smell which follows influenzal coryza, irrigations of the nasal passages with cold water, the use of irritating antiseptic solutions, over-indulgence in tobacco, alcohol, etc., often requires to be directly treated. In addition to removal, as far as possible, of the cause of the symptom, vibratory massage or inhalations of carbon dioxide may be employed to reawaken the irritability of the mucous membranes. Lermoyez recommends that a pinch of the following powder be snuffed up twice daily:

Strychnine sulphate.....	0.1 gram.
Powdered orris root.....	0.5 gram.
Milk sugar.....	10.0 grams.

M. ft. pulvis.

Where these measures fail, treatment by means of the galvanic current is indicated. In the extra-nasal method the electrodes, consisting of metallic plates covered with chamois skin, are placed on the back of the neck and the bridge of the nose, respectively. Two or three sittings of ten minutes each, with a current not exceeding six milliampères, should be given weekly. In the intra-nasal method, one electrode, consisting of a carbon plate, four centimeters in diameter, is placed at the root of the nose, while the other, made of metal and surrounded by a cuff of absorbent cotton, is of the size of a pea. A current not exceeding three milliampères should be passed for five to ten minutes through each of the lateral nasal parietes.

THE SICK ROOM.

MEDICAL NURSING—LECTURE No. 7.

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Diseases of the Kidneys.

INFLAMMATION of the kidneys occurs as acute and chronic. In acute cases the inflammation affects the epithelium of the tubules. It is more frequently met in young children, following acute infectious diseases, mainly scarlet fever, although we may see cases of acute nephritis to follow measles, influenza, pneumonia.

Acute nephritis may be the result of action of irritants like turpentine, cantharides, but rarely is due to exposure to cold; can occur, of course—be caused by blows and injuries. The main clinical changes observed in acute nephritis are in the urine. The urine, diminished in quantity, is of high specific gravity, smoky in color, like beef washings, due to presence of blood. Albumen is present in large quantities, and under the microscope we find casts of the tubules and blood, also renal epithelium. Fever, nausea and vomiting; dull pain over the region of the kidneys; dry, harsh skin; quick, tense and full pulse mark the onset of the disease. Due to the decreased excretion of urine, dropsy soon appears, beginning from the eyelids and face, which becomes puffy and swollen, extending to the extremities and trunk, presenting symptoms of general edema, anasarca.

The duration of acute nephritis is from two to four weeks.

A positive diagnosis can only be made upon examination of urine, and in cases of acute infectious disease such examinations ought to be made daily, not to miss a complication like nephritis.

As to treatment, the patients are kept absolutely in bed. Early getting out of bed in cases of scarlatina and a liberal animal diet during convalescence are frequently responsible for acute nephritis; therefore children with scarlet fever, no matter how mild or severe, are to be kept in bed from four to six weeks under constant supervision of the physician, or at least a nurse who is capable and ready to examine the urine daily and notice the slightest changes as to its quantity and appearance.

Diet in cases of acute nephritis is to be strictly a milk one. No broths or soups are permissible. All spices are to be avoided. Water may be offered to the patient liberally, but we must keep track of the amount of fluids consumed by the patient and compare it with the quantity of urine passed during the same time. If the kidneys are so congested that the patient does not excrete as much fluid as he has consumed, the result will be an over-taxing of the heart and arteries and more harm than good will be done to the patient by permitting him to drink water as often as he pleases. In severe, very acute cases, it is even advisable, while the kidneys are clogged up by inflammatory matter and the suppression of urine presents itself, to withdraw all fluid by mouth, and quench the thirst of the patient by giving him small pieces of ice. By acting so we protect the kidneys instead of whipping them and putting more work on the swollen, diseased, inflamed organ. Locally, dry cups every four or six hours, followed by hot poultices, relieve the pain and diminish the congestion, thus establishing a more favorable condition for secretion of urine. We keep the bowels freely open by administering salts or other purgatives for the purpose of draining off as much fluid as possible.

Another channel for the excretion of water is the skin, and we try to induce

sweating by ordering a hot-air bath or pack or a wet pack or a full hot bath. In successful cases a profuse perspiration is established and a large quantity of water leaves the body this way.

We possess drugs which produce perspiration, but they are powerful, weakening the heart, and we must be very careful in prescribing them. As to diuretics or drugs which increase the flow of urine, their obligation is only limited in cases of acute nephritis—on the same principle as we curtail the amount of fluids taken by the patient.

In cases of acute inflammation the kidneys are not able to excrete urine, so the action of diuretics is not a desirable one. On the contrary, all of them being more or less irritants to the kidneys, will tend only to increase the inflammation. After the flow of urine has established itself the secretion is nearing normal and there is still a retention of fluid in the skin or other portion of the body, then the diuretics are indicated. They will help to carry off this excess of fluid. The kidneys will be in a condition to respond to the action of this class of drugs. Digitalis, sweet spirits of nitre, acetate of potassium, cream of tartar, lemonade, caffeine, diuretin, etc., belong to the group of diuretics.

Acute nephritis is followed by symptoms of secondary anemia. The loss of blood with the urine and the albumin continually excreted causes weakness, feebleness and emaciation of the patient, and our measures are directed towards restitution of these losses. We still rely mainly on the milk diet, gradually allowing more concentrated proteids like eggs and beef, cereals, and prescribe for our patients iron in some shape or form to bring the blood back to the standard.

Chronic nephritis, chronic Bright's disease, rarely follows the acute form. In most of the cases we do not know the real cause of it. It begins primarily as a chronic or subacute inflammation, and we may consider only the predisposing factors or conditions which are associated with chronic nephritis, chronic alcoholism, lead poisoning, opium habits, syphilis, gout, chronic suppurations in other parts of the body. Chronic septicemia or chronic pyemia are very frequently associated with chronic nephritis. We differentiate two main varieties.

The large, white, smooth kidney, often twice the normal size; the capsule is not adherent to the organ and upon inspection we notice a considerable swelling of the cortical substance. The other variety, the interstitial nephritis, the contracted kidney, where the organ is reduced in size, the capsule is thickened and adherent to the surface of the kidney, is uneven, and on inspection the tissue is tough and resistant. The cortical portion is thin, atrophied, while the connective tissue is greatly thickened.

The color of the kidney varies from a darkish brown to a yellowish gray. The symptoms of the white kidney are different than in cases of cirrhosis of the kidney. The onset is usually gradual and insidious and the disease is seldom recognized until the appearance of the dropsy, which as a rule begins from the eyelids and face, extending later over the extremities and body. The patients are complaining of dyspnea, shortness of breath. They are pale, have palpitation of the heart, no appetite, neausea, frequent vomiting, They are subject to severe headaches and vertigo, and their vision is impaired. Eyesight suffers early in chronic disease of the kidneys. The urine is scanty, high colored, contains a good deal of albumin and casts.

The clinical picture in the other form of contracted kidney is different. The onset is also very slow and together with the changes in the kidneys there are chronic changes in the heart and arteries all over the body. The urine is increased in amount contrary to the case of white kidney. The micturition is frequent, urine is of pale color, of a low specific gravity, contains very little

albumin and may contain casts. There is no dropsy. The patients complain mainly of palpitation of the heart, shortness of breath, persistent headaches, vertigo, disordered vision and attacks of dyspepsia. The appetite is impaired, bowels irregular. They look pale, anemia is in evidence. The weight of the body declines, the skin is dry, the strength is failing.

The diagnosis of both conditions is only possible upon thorough examination of the urine, and the treatment will depend upon the diagnosis. Rest and diet are important elements. The patients with chronic Bright's disease are to have rest, mental as well as physical, as much as possible. The diet is of prime importance. While some are strong advocates of exclusive milk diet, it is self-evident that in cases of such long duration, like chronic Bright's disease, it is impossible to restrict the diet to one article of food. Very soon the patient gets tired of it and loses his appetite entirely. We must keep in mind that when prescribing the diet we must not only feed the kidney, but feed the body. Therefore a short course of milk diet, rigidly carried out, is undoubtedly very valuable, while in the long run we must pursue more liberal policies.

Recent investigations have shown that meat can not be considered as a forbidden fruit, as we used to think some years ago. It is true enough that we shall not insist and recommend an exclusively meat diet, but we can allow our patients meat, be it white or red, and soothe their palates. The main objections to meat were the extractive stuffs which were considered as irritants for the kidneys, and we cut them out on the same principle as we did tea and coffee, liquors and spices, etc.

At the present day we have positive proof that patients on more liberal diet did not show any untoward symptoms. On the contrary, they showed improvement as to the character of urine secreted and also as to their general health. While alcohol is absolutely to be forbidden, being a direct irritant of the kidneys and also of the heart and all arterial system; tea and coffee in moderation, vegetables, fats, eggs, meats and fruits can be allowed to these chronic sufferers without any fear. The amount of water permitted to drink is of importance.

You notice that in case of white kidney the organ is swollen and excretes very little urine. On the same principle as in acute cases, the amount of fluids is to be restricted not to over-tax the kidney, while in the interstitial forms, where the patients excrete large amounts of urine, where there is no retention of fluids in the body, we can allow our patients a liberal amount of water, only we must not lose sight of the fact that in cirrhosis of the kidney, the heart and arteries are also involved, and by allowing our patients large amounts of fluids we thereby increase the volume of the blood, and by so doing we certainly make our patients uncomfortable, the symptoms being more aggravating. Therefore, in cases of interstitial nephritis, it is also advisable to restrict the amount of fluids consumed, say to one and one-half quarts in twenty-four hours. When we have to deal with dropsy and diminished secretion of urine we proceed as in acute cases by ordering cathartics, and institute different sweat procedures to relieve the organs of the retained fluids.

Anemia which follows acute nephritis is treated on general principles by tonics, iron, arsenic, etc. One drug is to be specially considered, viz., iodides, because chronic nephritis is often the result of syphilis, but even in cases where there is no history of syphilitic infection, the iodides will have a tendency to check the proliferation of connective tissue and also reduce the inflammatory process existing in the tissues of the kidneys.

A FIVE-MINUTE GARGLE.

What is the average length of a gargle —not in inches, but in minutes? asks the *Dietetic and Hygienic Gazette.* In other words, how long does the average gargler gargle? We wish some of our numerous "research" specialists would make observations on this problem, for it has a very practical bearing on the question of mouth disinfection herein set forth. An innocent layman, who has been reading a book, finds expression as follows in the *British Journal of Nursing:*

As a layman who has unfortunately been obliged to remain for long periods under the care of doctors and nurses, I was very much struck by the following passage which I came across in a recent book on disinfection. The author, who is discussing the antiseptic precautions to be taken by surgeons and nurses previous to an operation, writes: "Very little attention is usually paid to the cleansing of the mouth, yet, when it is remembered that the saliva contains a larger number of microörganisms than the worst sewage, that streptococci and staphylococci are amongst the most numerous of these, and that they are proved to pass into the air in loud talking or coughing, it would appear worth the surgeon's while to take into account a cavity which comes so near the operation wound." He goes on to state that direct experiment proves that five minutes' gargling with chlorine water, 2% solution of permanganate of potash, or 1% izal, will reduce the number of organisms in the saliva for more than an hour to something like 6% of their original number.

It occurs to me that the medical officers and nurses of fever hospitals who pass from one kind of infectious case to another, might also practice oral disinfection with advantage. One hears of elaborate precautions to prevent mixed infections, and the cleansing of the mouth of the patient's attendants would seem to be a necessary feature of the scheme.

In the words of the poet, "Alas! poor Yorick!" When will they ever get ready for the operation? Five minutes washing in this, five minutes scrubbing in that, five minutes soaking in the other, just to get a pair of clean hands, and, at last, five minutes of gargling with such a mess as chlorine water or permanganate swashing through the oro-pharyngeal cavity. Reader, did you ever gargle for five minutes? Did you ever experience the above-mentioned germ exterminators in your mouth for the short space of 300 seconds? For the benefit of science will you try it?

Now, who would be willing to treat his or her perfectly good mouth in this way for the sake of banishing 94% of the flora for "more than an hour?" What fever nurse would repeat this process every hour or two in order to have a harmless mouth?

After thinking the thing over, we dislike to puncture the bright bubble of hope which Mr. Layman has floated before our sensorium, but we do not believe that the five-minute gargle will ever become popular as a part of the cleansing ritual of the hospital. We would remind our friend that there are nurses and doctors who know enough to keep their mouths shut during the critical parts of an operation. All others, we imagine, would prefer to be muffled and gagged in the soft folds of a bunch of hospital gauze.

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DYSPNEA.

The following formula has been recommended in dyspnea with scanty urine:

Dionini .....0.015-0.03 gram.
Digipurati .....0.1 gram.
Diuretini .....1.0 gram.

M. Sig.: One powder four times daily.

THE DOCTOR HIMSELF.

MEDICAL FEES IN OLDEN TIME.

CONCERNING medical fees, it would be possible to collect much curious material which might add interest to the discussion in which the doctors are now engaged. It is not, of course, within our province to express any opinion upon the negotiations between the medical profession and the Insurance Commissioners, and it will be obvious to the reader as the brief narrative unfolds that it is not part of its intention to help or to hinder a settlement of the dispute. At divers times and in different countries the amount of the fee has varied to a most remarkable and irrational extent; the methods of fixing the fees have also been numerous, varying from the Chinese principle of "no cure, no pay," to the method that is based upon no principle at all. The system of payment at a capitation rate is by no means new; it was certainly known nearly two hundred years ago, as is shown by the prospectus of "The Dispensary Society," founded in 1732, a copy of which is in the British Museum. The object of this society was to supply "the nobility, gentry and other reputable persons, or families, with all sorts of medicines required in time of sickness, at the rate of 2s. by the quarter to each subscriber." That the dispensary had the full support and approval of the medical profession is clear, for in order "to give the town some idea of this design" it is set forth in the prospectus that the dispensary, which was at the time in course of erection "near Tom's Coffee-house in Great Russell Street, Covent Garden," was to be furnished with the best collection of medicines, galenicals and chymical, and "is always to be subject to the examination and inspection of the Honourable the President and Fellows of the College of Physicians." The rules of the dispensary provided that any master of a family should be allowed to subscribe, and that he should make regular quarterly payments within fourteen days after each quarter terminates, but lodgers and servants "being persons less constant to their habitations than housekeepers" were required to pay in advance. According to the rules, every patient was attended by a well-experienced apothecary belonging to the dispensary, who administered both medicine and advice during the whole season of the indisposition; "and if the malady be such as requires attendance of a physician, the patient calling in his family physician, or what other he pleases, shall have his prescriptions faithfully made up at the dispensary, where he may be assured of the best drugs and medicines, it being the interest of the society to procure the subscriber's health and recovery as soon as possible." A further rule, disclosing a rough-and-ready method of applying the principle of selection of patients, which is practiced in a more scientific manner by modern friendly societies, provided that "as this design is to make people easy only against contiguous experiences of sickness, no one already laboring under illness must expect the privilege of subscribing; the Book being open to such only who appear in health at the time they enter their names." It was also provided that as the use and privilege of the dispensary were to extend no further than the inhabitants of London and Westminster and their respective suburbs, no person must expect to be supplied with medicines or attended by the apothecaries of the society out of these bounds, those subscribers only excepted "who remove (by advice) for the benefit of the air to any adjacent parts, within five or six

miles of London, where we oblige ourselves to attend them in the same manner as at the home." It was a resolution of the Society that no medicines be allowed to any person "in cases of surgery or the venereal disease, and these are the only diseases the Society exclude from the benefits of the dispensary."

Of all the principles upon which the amount of the medical fee has been based perhaps the most rational, and at the same time the most common, is that of regulating it according to the ability of the patient to pay. This principle was probably first established in time of which records do not exist. It is known, however, to have been practiced in ancient Babylon, and was, in fact, embodied in an official schedule of physicians' charges in the Code of Hammurabi (*circa* 2250 B. C.). Therein it was laid down that the fee for certain kinds of operations was to be from two to ten shekels of silver, according to the social position of the patient, if the operation was successful. If the surgeon was unsuccessful, not only did he lose his fee, but he also lost his fingers, if the patient was a member of the upper class; if the patient was a slave, and died under the operation, the law prescribed that the surgeon should restore a slave of equal value; and if in operation on the eye of a slave the surgeon destroyed the sight, he was required to pay silver to the extent of one-half the price of the slave. Here was a logical system of payment; perhaps it is too cruelly scientific to serve as a precedent for the doctors in settling their present difficulties! To come to more recent times, it is interesting to observe that in the earliest medical law of which there is any record in modern history definite provision was made for the rate of remuneration of medical practitioners. This was a law of Frederick II., the Holy Roman Emperor, and was enacted in the first half of the thirteenth century. It provided that a physician should visit his patient at least twice a day, and at the wish of the patient once also at night, and should charge him, in case the visit did not require him to go out of the village or beyond the walls of the city, not more than one-half tarrene in gold for each day's service. From the patient whom he visited outside the village or the walls of the town the physician had a right to demand for a day's service not more than three tarrenes, to which he might add his expenses, provided that he did not demand more than four tarrenes altogether. The law forbade him to enter into any relations with the apothecary or to keep an apothecary's shop himself. A scale of charges which might well make the twentieth-century chemist and druggist envious was laid down for drugs. It provided that the apothecary might derive the following profits from his sales: "Such extracts and simples as he need not keep in stock for more than a year, before they may be employed, may be charged for at the rate of three tarrenes an ounce. For other medicines, however, which in consequence of the special condition required for their preparation or for any other reason, the apothecary has to have in stock for more than a year, he may charge at the rate of six tarrenes an ounce."

In England at that time the medical fee was probably as irregular as medical practice. Early in the reign of Edward I. the court surgeon received twelve pence per day, and nine marks for robes; but there appears to have been no fixed rate of remuneration for physicians attending less exalted patients. The apothecary of Edward III. was granted a pension of sixpence a day, but what his pay was as a practitioner does not appear to be recorded; in the latter part of the reign, however, it is recorded that four London surgeons were admitted before the mayor and aldermen, who were sworn as master surgeons to deserve well and truly of the people in

attending their cases, and "to take only reasonable payment." In the court of the Kings of Wales definite fees were established for the physician or surgeon, who was the twelfth person in rank. For curing an ordinary flesh wound his allowance was such of the garments of the wounded person as were stained with blood; but for curing dangerous wounds he was allowed one hundred and eighty pence and his maintenance, in addition to the blood-stained garments. In the accounts of the Earls of Cumberland, under a date in 1527, the sum of £1 is mentioned as having been paid to a physician at Cambridge; another entry is, "Item to a physician at Westminster for seying my Lord's water, 4d." In the same year Sir Walter Strickland entered into a contract with a physician to cure him of asthma for £20. At the beginning of the eighteenth century it is recorded that the usual fees to physicians and surgeons were: "To a graduate in physick, his due is about ten shillings, though he commonly expects or demands twenty. Those that are only licensed physicians, their due is no more than six shillings and eight pence, though they commonly demand ten shillings. A surgeon's fee is twelve pence a mile, be his journey far or near; ten groats to set a bone broke, or out of joint; and for letting blood one shilling; the cutting off or amputation of any limb is five pounds; but there is no settled price for the cure." At that time barbers and surgeons still had many things in common, and it may be that a patient who was slow in paying was stimulated by some such order as that made by the barbers of Newcastle in 1742: that "no one should shear John Robinson till he pays what he owes to John Shafto." William Wadd, surgeon extraordinary to George IV., who made a small but interesting collection of what he called "the 'quantum meruit' or honorarium to professional men," relates that in Portugal it was no uncommon thing to pay the doctor by presenting him his own portrait. Occasionally, however, the faculty have met with still rougher treatment. Thus the wife of the King of Burgundy had, in compliance with her dying request, her two physicians slain and buried with her. "These," says Wadd, "were probably the only two medical gentlemen who were ever privileged to lie in the tombs of kings." Wadd also recalls in his "Memoirs" that, on the death of Pope Adrian, the night after his decease the door of his chief physician was ornamented with garlands, with the inscription, "To the deliverer of his country." It is not likely that any of these methods of acknowledging the services of medical practitioners will be suggested by the Insurance Commissioners.

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IMPRESSIONS OF SHELLEY.

The following letter written by Ingersoll's granddaughter to a friend gives a most interesting account of the impression made by a great poet upon a literary soul tuned to appreciation:

"In response to your delightful letter," she writes, "it gives me great pleasure to put in a few words the chief impressions made upon my mind and heart by what I think I may truthfully state to be, on the whole, my favorite poem. Although when one tries to choose the one of all others—the elect in so vast and wondrous an effulgence of beauty and truth—one's brain may well be dazzled and overcome by a sense of its own impotence.

"Yet I think that now, even as when a very small child, the poem that most impresses me—the poem I most love, read and reread—oh, how many, many, happy times! until it has become a part of me—of the fibre of my being—yes, of my very soul—is Shelley's *Ode to a Skylark*.

Hail to thee, blythe spirit,
Bird thou never wert,
That from Heaven, or near it,
Pourest thy full heart
In profuse strains of unpremeditated art!

"What infinite felicity of phrase! What perfection of feeling and expression! What subtle harmony of sound and sense, of thought and music! And again:

Higher still and higher from the earth thou springest,
Like a cloud of fire the blue deep thou wingest
And singing still doth soar, and soaring ever singest!

"Can there be conceived a more marvelous description of the ecstasy of flight and the aspiration of a free, sky-mounting soul? The spirit of this bard was indeed attuned to the 'music of the spheres'—the melody of cosmos—the grand, triumphal anthem of creation!

"What could exceed the poignancy—the almost painful intensity—of contrast between this passage and the previous?

We look before and after,
And sigh for what is not;
Our sincerest laughter
With some pain is fraught;
Our sweetest songs are those that tell of saddest thought.

"Both trains of thought so true! One voicing the beauty, the ecstasy—the other the agony and ineffable pathos of universal life. For, a poet, to be worthy of the name, must feel with the fullness of his being the solemn and eternal tragedy of nature—the pity of old age and waning strength—the pathos of love's last and long embrace—the hideousness of death and slow decay—the littleness of man when he must needs confront the elemental things. And it is precisely this inherent sadness in all life that gives to it a glory and a zest.

"'Were men incapable of suffering, the words right and wrong would never have been spoken;' and love, the crowning wonder of creation, would never have been born.

"I love the *Skylark* for the thoughts it gives to me—thoughts of manifold nature—thoughts from the 'glow-worm golden in the dell of dew to the love-lorn maiden in her palace tower;' and the 'star of heaven' banished by the perfumed breath of morn—thoughts that moan and sob and wail—thoughts that sing and out-soar heaven itself—thoughts that bud and blossom and bear promise of rich fruitage—thoughts that seek to fathom all the founts of truth, all natural, physical and mental laws—thoughts that try to solve 'the riddle of the universe,' the secret of the Sphinx, the depth and height and reach of dreams—thoughts that are in quest of paradise."

The almost infinite diversity in effect of the poetry habit is one of its impellent charms. No two minds react alike to poetic energy. In a vague way those of the habit regard poetic energy as elemental, just as love is elemental. And as love affects individuals differently in degree, attitude of mind and emotive vibration, so are individuals variously affected by poetry. The individual's reaction to elemental environment is determined by countless factors, many of which, although known to psychologists, remain as yet unstudied and in the henid state. But among such factors as have been studied, that of *experience* stands forth prominently. And behind experience, obscured by the phantasmagoric shadows of consciousness, looms the proteus fact of *capability*. Thus we have only proximal results from which to determine more distal causes. And we do not have to follow these very far to see clearly enough that only the soul which suffers may know spiritual growth—that only the intense soul of multifarious experience may know the full spell of poetry or feel all its power. The poetry habit, in the best meaning of the term, fixes itself only upon the souls that *feel*—those that have suffered and enjoyed the widest range of emotional experience.

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ANDREAS VESALIUS.

The *Therapeutic Digest* gives an interesting summary of the life of the great anatomist. Born at Brussels in 1514, Vesalius began his studies at Louvain. Possessed of an almost fanatical liking for dissection, he resorted to rob-

bery of gallows and graves for working material. The laws of the Church forbade the mutilation and dissection of the human body and the Holy Inquisition stood ever ready to mete what was considered a just punishment to an offender guilty of such a crime.

Undaunted by opposition, by persecution, by the ridicule of the followers of Galen, by the terrors of death by fire and torture, Vesalius continued his great work, and instructed a few student disciples as best he was able.

In the beginning he was frequently compelled to conceal the subjects for dissection under his own bed for weeks, awaiting favorable opportunities to pursue his investigations.

At the age of twenty-eight, he published his famous work, "De Fabrica Corporis Humani" in seven volumes.

The fanciful theories of Galen were completely overthrown and new theories founded on observation, experimentation and fact were adduced and given life.

Visual examinations dispelled the suppositious beliefs of his illustrious predecessor. Man's thigh bones were found to be straight and not curved; man's missing rib that was taken from Adam for the purpose of constructing him a mate, must have developed again, as Vesalius was unable to discover its loss; his researches on the vascular system in certain ways anticipated Harvey's discovery of the blood circulation; he gave a full acount of the anatomy of the brain; a description of the sphenoid bone; he was the first to describe the omentum and its relation and connection with the stomach, spleen and colon.

Many of the most important functions and structures of the body were described with remarkable accuracy, and with an insight into the basic knowledge of so new a subject that his works have remained as a matter of wonder to the medical profession of today.

Such a master mind could not remain long in obscurity. After teaching at the University of Basle, he was called to the honor of serving Charles V. as court physician, and later in the same capacity to Philip II. of Spain.

Unfortunately for Vesalius, and for mankind in general, the ease and luxury of court life exerted its influence on the great scholar. His studies were discontinued or left to the tender mercies of his former pupils. He found more enjoyment in feasts and courtly pleasures than in the sights and odors of the dissecting room. He married and settled himself for a life of ease, rather than endeavor.

Later in life he realized what he had sacrificed, and on the perusal of a book by one of his pupils, Fallopius, he determined to forsake the court and its pleasures and return to the pursuit of knowledge. Unfortunately for Vesalius, however, a nobleman died about this time and the skilled physician determined upon an autopsy to discover the possible cause of death. When the chest was opened. Vesalius and his assistants discovered that the heart was pulsating about as naturally as it ever had in life. The news spread, and a charge of murder was lodged against the unfortunate operator, but owing to his prominence and his attachment to the powerful Philip II., the sentence was commuted to a pilgrimage to Jerusalem.

While in Jerusalem, he was informed by the Venetian senate of the death of his friend and pupil, Fallopius, and an invitation was extended to him to fill the Paduan professorship which Fallopius had occupied.

Imbued with the hope of regaining at least a portion of the respect and esteem in which he had been held, and desirous of forgetting the unpleasant past in the labors of his beloved profession, Vesalius sailed for his new land of promise.

However, fate had decreed a different end for the great teacher. In the Ionian

seas a mighty storm arose and wrecked the vessel on the shores of the beautiful island of Zante. With the disappearance of the ship, Vesalius was swept off into that great unknown whither he had seen so many of his fellow-men depart. But in this case, death had indeed lost its sting. The labors of the man had borne fruit, and his teachings had laid clear the paths of endeavor that would lead to the alleviation of pain and the benefit of mankind. The laurel wreaths of honor had been too firmly bound on the brow of the Father of Anatomy for the fingers of Death to so lightly brush aside. Though Vesalius died, his works shall continue to endure.

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LORD ROSEBERY AND MEDICINE.

"Great men," says Schopenhauer, "are like eagles, and build their nest on some lofty solitude;" but sometimes they descend from the heights to encourage and inspire the dwellers on the plains. Lord Rosebery on July 1st gave away the prizes to the successful students at the London Hospital, and in the course of his address he paid a striking tribute to the "noblest secular profession in the world." The nobility of the medical profession is a well-worn theme, but Lord Rosebery seldom touches a subject which he does not illuminate and adorn both for those who hear him and for those who afterwards read his words. He began by speaking up for the medical student, whose manners and morals have too long been under the cloud of an early Victorian legend. As Mrs. Prig said of Mrs. Harris, so did Lord Rosebery, but in choicer English, of Bob Sawyer and Ben Allen; and he went further, for he doubted whether anything like them ever existed. Then he spoke with just a tinge of regret of the passing of that familiar figure of his childhood, the country apothecary, who has gone down before the march of progress and of whom little trace is to be found in the modern general practitioner. Lord Rosebery's final eloquent words of praise and understanding of the work and aims of the medical profession were worthy of a statesman whose mind has been trained to see things in a large way and who believes in the better side of things. He said that medicine was the noblest profession of them all, because it was the forlorn hope of humanity itself. It was a forlorn hope, because it never could hope to conquer in the long run; yet it never despaired and was always seeking new inspiration and new strength for the battle which could only have one termination. It was a forlorn hope, because it combated the reptile of disease, from which, though they might successfully cut off a limb, yet, like the fabled dragon of old, another new limb sprang up to take its place. It was a forlorn hope, because even when they had surmounted and conquered one form of disease another and new form, such as sleeping sickness, was sure to spring up in its place. It was a forlorn hope, because all day and every minute of their career medical men were fighting with the angel of death, which must inevitably defeat them in the end. He did not think that this was really a gloomy view to take of the work of the medical profession, because a life which could be spent in the complete conquest of obstacles was rare in all professions. But the heroic fight of medical men was not for their own selfish interests, but in the cause of humanity itself. Lord Rosebery concluded his inspiring address by asking his hearers to be proud to take part in this great crusade on behalf of mankind. Many fine things have been said of the medical life by laymen, but the Chancellor of the University of London has a special duty towards the medical profession, and his speech at the London Hospital comes at a moment when medical men are particularly in need of sympathy and comprehension on the part of the general public.

MARRIAGE RITES AND WRONGS.

A wedding, says a writer in *Brain and Brawn,* even under the most favorable circumstances, is a trying ordeal for a girl who is not hardened by what we call society, but who retains at least some of the freshness and sensitiveness of youth. It is made much harder than it should be by long-drawn-out preparations, and formal public, or semi-public, ceremonies and functions. Sometimes to this may be added fool practical jokes in the shape of "charivaris," used in Europe only as intentional insults, but here regarded by people of feeble wit as jokes.

Then comes the honeymoon, too often turned into a sexual debauch by ignorant husbands, who suppose that the marriage license, like charity, covers a multitude of sins—or indiscretions—whereas Mother Nature knows nothing about marriage ceremonies, and will exact her pound of flesh for breaches of her laws, whether they occur within or without the marriage state.

How often do we hear of brides leaving their husbands within a few days, or even hours, of the ceremony, or committing suicide. How many young married women break down early in life, and how many bridal barks, starting apparently under fair auspices, soon encounter gales and break up. It is the natural result of revulsion and aversion, following satiety. If you investigate, you will find that this is the real cause of a great majority of our numerous divorces. Physicians and lawyers could tell some gruesome stories on this subject. This is due not so much to lack of feeling on part of the husband, as to absolute lack of knowledge in regard to sexual laws. He should remember that with a great majority of women sexual passion is secondary to love, whereas in man, as in all other males, it predominates, although often he—and sometimes she—mistakes passion for what the novelists and dramatists call "love." With the woman it is as Milton says of Eve, "She would be wooed, and not unsought be won."

Here is a little story that illustrates the subject of which I write. It is from a book entitled "Buchanan's Wife," by J. M. Forman:

"You put me in mind," said the Russian, "of a story I read a long time ago—a French story. I have forgotten who wrote it. It may have been a great man. I have no memory. The story was about a man who married a girl practically from the convent, but, oddly enough, he happened to have fallen in love with her before the marriage. More oddly still, he was very wise, and he realized the truth of what you have just been saying, and he made an experiment—I might explain that he was no longer very young. A young man could not have done the thing. On the wedding-night he handed his bride to the door of her chamber, and kissed her finger-tips. He did not even kiss her cheek. He pointed out to her that the door could be bolted from the inside, and bade her good-night. She seemed a bit surprised and more than a bit relieved. Then this man set in, day by day, to make his wife fall in love with him, and he had had long experience to teach him how. He brought her flowers each morning, he rode with her, he flirted with her. He made love to her—but not too much. And every night he kissed her fingers at the door of her chamber and bade her good-night. Eh, he was wise!"

"Well?" demanded Arabella Crowley, sitting up. "Well? Get on! How did it end?"

M. Stambolof emitted a little, gentle laugh. "After about a fortnight of this," said he, "the bride knocked on her husband's door with a hair-brush one night and said she was afraid."

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A FABLE.

The hen remarked to the muley cow,
As she cackled her daily lay
(That is, the hen cackled), "It's funny how
I'm good for an egg a day.
I'm a fool to do it, for what do I get?
My food and my lodging. My!
But the poodle gets that—he's the household pet,
And he never laid a single egg yet—
Not even when eggs were high."

The muley cow remarked to the hen,
As she masticated her cud
(That is, the cow did), "Well, what then?
You quit and your name is mud.
I'm good for eight gallons of milk each day,
And I'm given my stable and grub;
But the parrot gets that much anyway—
All she can gobble—and what does she pay?
Not a dribble of milk, the dub!"

But the hired man remarked to the pair,
"You get all that's comin' to you;
The poodle does tricks, an' the parrot kin swear,
Which is better than you kin do.
You're necessary, but what's the use
O' bewailin' your daily part?
You're bourgeois—work's your only excuse.
You can't do nothing but jes' produce—
What them fellers does is Art."

REFRACTION.

THE OPHTHALMOLOGY OF GENERAL PRACTICE.

By M. L. Hepburn, M. D., B. S. (Lond.).

(Continued.)

(In the *Lancet*.)

Squint and Defects of Muscular Action.

ALTHOUGH it is not essential, nor indeed advisable, that the general practitioner should carry through on his own account the treatment of a case of squint in every detail, still he must be perfectly familiar with the various steps necessary to bring about as satisfactory a cure as possible, *both as regards the deformity and also the visual acuity of the squinting eye.* Parents are naturally most anxious about the former, since the importance of the latter is not known to them owing to the fact that when both eyes are open, the visual acuity of the non-squinting is sufficiently useful to create the false impression of good sight in both. Unfortunately, general practitioners are often deceived themselves and fall into the same error as the parents, and, from their knowledge of the fact that a squinting eye in some cases eventually becomes straight, they seek to allay the anxiety of the parents by saying that "he or she will grow out of it." This remark is even now frequently heard, but no graver mistake could possibly be made in the initial stages of the treatment of squint. An eye, which is not directed towards an object, so that the image is formed on the true macula, can never have the full standard of vision, even though some other portion of the retina has been developed in order to produce a false macula. Therefore, an eye which is abnormally deflected will gradually lose its power of visual acuity, the loss being greater the earlier this deviation occurs and the longer it is allowed to remain in this position; and provided we have come to the conclusion by the application of the recognized tests that an eye squints, the sooner vigorous steps are taken for rectifying the deformity the better results we shall obtain. There is no age too early to begin, but of course in the case of infants it is not always an easy matter for the comparatively inexperienced to be sure whether a true squint really exists or not. The first point to decide, when a child is brought to us who is said to squint, is whether there is a real squint or only an apparent one. Get the child to fix an object immediately in front of it about two feet away, then let us make up our minds which eye appears to us to deviate; this eye, therefore, is *not* fixing the object, and vision is being carried on entirely by the other eye; now cover with a card fixing the eye and ask the child to observe the object; in order to do this with the non-fixing eye a movement must be made for the purpose of seeing clearly. If this movement occurs in the non-fixing eye then we may pronounce the case one of real and not apparent squint only; whereas if no movement takes place the general practitioner (not always the expert, however) is justified in assuming a squint is not present. Again, a squint, if it exists, may be concomitant (*i. e.*, associated with the movement of both eyes together) or paralytic, and the latter can be independently investigated by testing the actions of the various muscles. This condition generally occurs in adults, and a good deal of help is gained from the history they give which enables us to make a more or less accurate diagnosis, but the concomitant variety of squint calls for unassisted examination and immediate treatment.

Squint may be convergent or divergent; and concomitant strabismus is gen-

erally due to a combination of three causes, viz.: (1) refractive error, (2) defective muscle balance, and (3) bad fusion sense, though sometimes only two may be necessary to produce deviation. The predisposing cause is the error of refraction, and, if the child is old enough to read, the accurate vision *in each eye separately* must be taken and recorded; the error must then be measured by retinoscopy under atropine, and suitable glasses ordered for constant wear. The practitioner may, if he has had considerable experience in refraction work, order these glasses and carry out the first step in the treatment on his own account; and if, or as soon as, the child is able to read letters, a periodical record of the vision in each eye, especially the squinting eye, must be carefully kept, but this is only of value when the deviating eye has been straightened as a result of wearing glasses. No matter how carefully and accurately the glasses have been measured, if they fail to remove the deformity of the squinting eye when regularly worn there is the same danger of amblyopia occurring as if glasses had never been ordered, except by the adoption of methods which are almost impossible for the general practitioner to arrange for. The deviation is not always rectified at once, and during the period of alteration it is a good plan to educate the squinting eye by covering the fixing eye for a certain time during each day; in this way the eye becomes a useful organ immediately it assumes the straight position. It is better to wait at least a year before stating definitely whether glasses will be successful in correcting the deformity or not; if at the end of this time there is no improvement in the condition, it generally shows that the case has not come under observation early enough, and that the muscles, which, by their action, have contributed to the production of the deformity, have become permanently fixed and contracted, so that the effect brought by wearing glasses to remove the predisposing cause is not sufficient to overcome the muscular defect; it is therefore necessary to deal in some way with the offending muscle, and thus various operations have been devised. Now, when we have arrived at the stage of treating squints by the performance of operations on the muscles, I should strongly advise the general practitioner to surrender the case to an ophthalmic surgeon. Nothing sounds easier than to perform a tenotomy on an over-contracted muscle, and, indeed, it may be considered a perfectly simple operation even to those not specially adept in ophthalmic surgery; but the remote effect of a tenotomy or any operation on the ocular muscles is so variable in its results that it is never safe to prophesy exactly what is going to happen, and even if the medical man's reputation does not suffer he may sooner or later find himself face to face with the question of deciding what is to be done next without any very clear idea of the mode of procedure.

The muscle balance of the eyes, which should normally be preserved without any voluntary purposive muscular action, may be at fault and give rise to very marked and uncomfortable symptoms, apart from any error of refraction or defective fusion sense. Very little of this is known to the general practitioner, and it requires special methods for its detection and treatment; the latter is carried out either by exercises, prescribing of prisms, or operations on the muscles. These cases should, I think, be left alone, and the medical man has simply to bear in mind that intense headache, perhaps lasting all day and unaccompanied by any error of refraction, may be caused by want of balance in the ocular muscles. Definite paralytic conditions of the muscles may be due to local causes or may be a symptom of some disorder of the central nervous system.

Defects of Sight Unaccompanied by Any Obvious External Evidence of Disease.

We have now come to the second group where patients complain of some defect of vision in one of both eyes, but in whom there is nothing externally visible to guide us in making a diagnosis. In these cases we must conduct a very methodical and independent examination.

In the first place, we must verify the patients' statement regarding their vision by taking a record of the sight in each eye separately with Snellen's types, etc.; then examine the pupil reaction and tension as described in a former paragraph. The case may be one of refractive error or intraocular disease, and we must always assume it to be the former until we have proved the contrary. Steps are next taken to settle this point by means of retinoscopy either with a plane or concave mirror, and this may be carried out either with or without a mydriatic, though the latter method requires considerable experience. The promiscuous use of a mydriatic, even homatropine and cocaine, for diagnostic purposes in all affections of the eye is not to be encouraged, though after some time one learns where dilatation of the pupil may safely be undertaken, but we must never forget that cases have been known where, in those liable to glaucoma, an acute attack has been precipitated by the use of atropine.

By carefully comparing the results of our retinoscopy with subjective testing the most suitable correcting glass can then be found, but our difficulties are by no means then at an end, for we have to make our patients comfortable in their glasses for everyday use, which is often a very different matter. The many little details that require consideration in the ordering of glasses, the statements made and questions asked by patients, and the complaints which arise after the first few weeks of wear, have all to be satisfactorily settled.

Moreover, good refraction work is the foundation of all future ophthalmic practice, since the public are still imbued with the idea that glasses can cure all defects of sight, and if a general practitioner, after all his trouble, succeeds in giving satisfaction, he will immediately gain the reputation in the neighborhood of being an experienced ophthalmic surgeon. Thus cases of all sorts will be sent to him, some of which probably he has never seen before and will have a very imperfect idea of how to handle. Is this what he desires or is it not? This is the question he will eventually have to face, and perhaps several eyes may be lost before he has made up his mind.

In spite of all this, an elementary knowledge of refraction work, such as may be gained by an attendance of two or three months at an ophthalmic hospital, is absolutely essential to a general practitioner. He will save himself endless labor and worry if he knows and can detect the movements of the shadows in hypermetropia, myopia, and simple or mixed astigmatism, and is able to estimate approximately the glasses which correct the error. It often happens that a patient has perhaps only one defective eye, which when tested by Snellen's types appears to have a very low degree of visual acuity, and we are in doubt as to whether it is due to disease or merely refractive error; a knowledge of the use of the retinoscope will soon clear up this doubt without being strictly accurate in the results, and improved vision with a correcting glass will soon make an apparently serious case appear far less formidable. A careful examination of the fundus, however, is desirable as early as possible. In every case of defective sight for which there is no obvious external cause, never miss the opportunity of estimating roughly the refraction, even though it be a case where an operation has been performed.

A practitioner will be expected to order glasses for presbyopia, but this is

by no means so simple as it sounds. Since presbyopia is a physiological process, it naturally differs in different individuals within certain limits, and no definite mathematical calculation by reference to the age will alone suffice to enable us to prescribe the correct glasses, some eyes being younger while others are older compared to the age of the patient. In the first place, all presbyopes must be tested for distance, and the strength of glass calculated from the age of the patient, due allowance being made for any small degree of myopia or hypermetropia. Then test subjectively and ascertain the glass with which the patient can see most distinctly the smallest Jaeger type at 12 to 18 inches, and it will generally be found that this works out very often considerably less than the mere mathematical calculation.

In the absence of refractive error, or the failure to produce any amelioration in the vision after correction with glasses, we have probably to do with a case of intraocular disease which may be situated in any of the media, the retina, or choroid.

I have elsewhere referred to the red reflex visible when light is reflected into the eye from an ophthalmoscope mirror, and this red reflex should be visible, provided the media are clear, with the same uniform intensity, to whatever portion of the fundus we direct the light. The different parts can be examined in this way either by inclining our head and thus directing the light towards the portion we wish to investigate, or by asking the patient to move his eye into the desired positions; the latter is perhaps the best method, since at same time it sets in motion any defects in the eye (*i. e.*, vitreous opacities or detached retina) which are capable of movement.

If we observe, for example, in any part of the fundus a white, gray, yellow or black reflex instead of the normal red color, we know that there is something abnormal in the interior of the eyeball, perhaps some new growth or inflammatory deposit in the vitreous, choroid, or retina; it does not matter for the moment exactly what the nature of the change is. The detail may require considerable experience in ophthalmoscopic diagnosis, and to apply a name to the condition and satisfy the patient respecting it may be a matter of extreme difficulty, utterly outside what could reasonably be expected from a general practitioner, but he has been able to locate the part of the eye where the disease exists and is prepared to advise as to a further opinion, which is a point of no small importance. My reason for advising against all attempt at detailed ophthalmoscopic work is that there are three main difficulties which have to be overcome in the use of the ophthalmoscope. The first is, to get beyond and learn to disregard all the various reflections from the mirrors, cornea, etc., and obtain a view of the interior of the eye; the second is, when the different parts of the fundus eventually become visible, to distinguish the normal from the abnormal; and lastly, having definitely decided that a condition is abnormal, to interpret pathologically what is seen. To my mind it is impossible, with the material at his disposal, for the general practitioner to master satisfactorily these three difficulties.

It only remains to mention that, even after carefully following out these methods of examination, valuable as they are, we may still be unable to account for the defective vision. Such cases may be due to tobacco poisoning or some other form of toxic amblyopia, when we often obtain the history of failing sight occurring in both eyes simultaneously, both for distance and near, extending over a comparatively short period of time. Few other cases give this history, and a color scotoma will also be present. Chronic glaucoma will often, as I have mentioned, only give rise to mists and halos, while optic neu-

ritis and commencing optic atrophy may have perfectly good central vision, and the diagnosis can only be arrived at by careful ophthalmoscopic examination.

A good rule for guidance in obscure cases is never to neglect the history of blurring of the sight, however transitory in nature, and test roughly the field of vision in each eye separately (*e. g.*, with a small piece of white card mounted on some suitable holder) when other methods of examination have failed to reveal any obvious disease.

Operations.

The operations on the eye are of a different type to operative surgery on other parts of the body and have to be separately learnt; it is quite impossible to gain any useful experience in this branch from the knowledge already acquired in ordinary surgical operations. The small area in which the work has to be done, the minute points in technique on which so much really depends (though to the inexperienced apparently trivial and exaggerated), the performance of most operations under local anesthesia, the behavior of different eyes of ostensibly similar nature, to surgical interference, and the permanent results, glaringly obvious to all, of failures, often carried out to the very best of our knowledge and experience, are some of the causes which may well deter general practitioners from undertaking operations on the eye; and even those operations which admit of no adverse criticism from a surgical point of view sometimes bring little satisfaction to the patient for no obvious reason.

I should advise a general practitioner to consider carefully before he undertakes any ophthalmic operation; it is possible for him to create a good impression, but more often than not he will lose all the reputation he has already gained.

The drugs and instruments required can be gathered from what I have said under the different headings, and it will be seen that they do not amount to very much, with the exception of a small box of lenses; but with these and the methods of diagnosis I have briefly outlined the general practitioner will be sufficiently well equipped to deal with most eye cases which come under his care.

If it is thought that in one or two places I have expressed myself too strongly, it is because, after several years' independent experience of an ophthalmic and a general practice, I realize the difficulties met with in both; and that although they must necessarily be combined to a certain extent, a distinct line has to be drawn between the two; and I also believe it to be the sincere desire of many men in private practice to know how near they may approach this line with safety, alike in the interests of their patients and of their own professional reputation.

THE FUSION FACULTY.

In the case of a normal sighted person, says Thorne, in the *Wisconsin Record*, the two sets of visual impressions received by the two eyes are fused in the brain into one picture. In order that fusion may take place, the directions of the two visual axes must accurately correspond. The cerebral faculty of fusion being perfect, the oculo-motor apparatus will make great efforts to secure this accurate coördination. If one image be displaced by putting a prism before one eye, the relative positions of the eyes will be readjusted so that the two images may still fall upon corresponding points of the retina. A want of balance of the motor apparatus will cause not a squint, but a heterophoria. If, however, the control of the fusion faculty be temporarily withdrawn—for example, by covering one eye—the eyes will deviate. If the eyes are hypermetropic there will be a tendency to excessive convergence during accommodation, but in the interest of binocular vision this tendency will be kept in check.

If the eyes are forcibly compelled to deviate—for example, by paralysis of an external rectus muscle—the patient will have persistent diplopia. If the fusion faculty be absent there is no reason for a perfect record in the direction of the two eyes, any disturbing factor, such as hypermetropia, motor unbalance, mental disturbance, etc., will give rise to a squint. There will be no diplopia, because this person is only able to receive impressions from one eye at a time.

SELF-DESCRIPTIVE TEST TYPE.

Some distant test types, says Maddox in *The Ophthalmoscope*, which I had painted some two or three years ago have proved so satisfactory in use ever since that they may be worth describing. Their advantages are threefold.

1. The letters are so selected as to automatically indicate or confirm their own visual value, so that no need exists for small figuring between. It is sometimes convenient to go through a refraction seated with the back of the operator toward the types, and there is a certain sparing of a mental process if the letters pronounced by the patient inform him of their own value. The three first letters are the terminal ones of 60, 36 and 24, the next three being the initial letters of 18, 12 and 9. I can not think of any way of making them all initial, but find that after a little practice this arrangement works quite as well.

It is well to place an I after the N, because N is an unusually difficult letter. I now, therefore, combine N with what is perhaps the easiest letter in the alphabet, and which also conveniently happens to be the second letter of the word nine. The six meter line contains three letters, SIX, which contribute lines in all directions, so as to be suitable for the correct setting of a low cylinder in cases having full vision. The letter F in the corner is to ascertain those who have 6/5, but not for the purpose of setting their cylinders. For slightly amblyopic patients the letter T is the best for the setting of oblique cylinders, the Y and X being for vertical or horizontal cylinders.

FIG. 1.

The letters wherewith the chart commences, viz., Y and X (when printed plain, and without knobe), are by happy coincidence the very best to call attention to the presence of oblique astigmatism. It is extraordinary how sensitive patients are in discerning which is the blacker of the right and left-hand branches of a uniform Y, and they will often remark

upon it without being asked. Such an observation not only reveals the presence of some still uncorrected astigmatism, but also indicates in which direction the axis of the cylnder should be rotated. The human eye, indeed, always perceives any peculiarity more readily in familiar than unfamiliar objects, and with some patients letters like Y elicit astigmatism better than charts of stripes, though with intelligent subjects the latter present immense advantages.

The letter X is a good one to follow the Y, since it confirms the impression already given.

A great saving in time is effected by having one letter only in each line of the test types, except the last one or two. The patients read them quickly down and speedily read the working line. I was first indebted to Mr. Priestley Smith for advising me to employ fewer letters than usual in the distant types.

This chart is sufficient for nine-tenths of routine work, and can save many hours of that valuable time which is little more than wasted when patients persist in struggling through long lines of letters. Nevertheless, it is wise to have another, ampler chart ready for use in special cases, as, for example, when the letters are learned too quickly, and an ideal arrangement would be to suspend beneath this chart one of those boxes of type which reveal one line at a time on the calander principle, the lettering of which could also be made suggestive of the visual value of each line on the same self-descriptive principle.

Near Test Types.

The ordinary test types employed are needlessly voluminous, and the subject matter being sometimes of interest to patients, they are tempted to go on reading longer than is necessary for the purpose. Moreover, in reading portions of literature, a certain amount of guess work enters into the power of reading. A further waste of time is occasioned by the act of the operator, when he looks at the type to record its numerical value, and since the test types are not always immediately at his hand, a second or two may be spent in fetching and taking them back to their usual resting place. These losses of time, each insignificant in itself, are worth saving when a large number of patients have to be seen, amounting collectively to a good many hours in the year. For this reason, I have had some test types constructed for the waistcoat pocket, which can be brought out with the least delay. The lines are brief, and the sentences not usual ones, so that one word does not suggest the next, save in the very smallest, which serves to remind the refractionist, when a beginner, how to record the value of near vision.

The subject matter of each line conveys to the refractionist's mind the visual value of that line, so that he need not himself glance at the types. As the patient reads them down, the size of the types is thereby read out. This self-descriptive principle will, I think, be found as helpful for near-vision type as for distant ones.

It may be allowable to point out a possible inadvertency in the use of such types, namely, that visual acuteness in near vision, and the "near point" are sometimes confounded by students of refraction. To measure visual acuteness we should not only find the smallest type legible, but the *greatest* distance at which it can be read; whereas in measuring for the near point we find the *least* distance at which it can be read. In recording visual acuteness the greatest distance at which the type can be read forms the numerator, while the distance at which the type is normally legible contributes the denominator. When visual acuteness is recorded by J_1, J_2, and the like, we only really put down the interesting fact that the patient can read *somehow* type thus described, but the visual acuteness is not thereby recorded. For example, a presbyope who can read J_1 at half a meter has four times the visual acuteness of a young emmetrope who can read it

equally well at (but not further than) 12, or 13 cm. The same criticism applies to the use of Snellen's near types when they are only recorded as .6, .8, etc. In practice the fallacy has less in it, because we generally know the age of the patient, and the visual acuteness as already recorded from distant types, but there are cases in which the contraction and displacement of the pupil which occur in near vision, render the visual acuteness for distance and near, not identical.

For convenience in visiting when distant types are not to hand, I have added two of Landolt's broken rings, one of which should be normally seen at 6 meters and the other at 25 meters. The fraction of these distances at which they are respectively visible, expresses the visual acuteness as usual.

Two green spots have been placed on opposite sides of the larger ring, as a test for tobacco amblyopia, the patient being directed to fix his attention upon the center of the smaller ring, with one eye closed, and compare the appearances of the two greens. In tobacco amblyopia the green on the temporal side appears, of course, more washed out than the other, if its color be distinguishable at all.

A striped diagram is also supplied to enable astigmatism to be measured in near vision, never, of course, to replace its more important static measurement in distant vision, but to ascertain whether the act of accommodation alters its amount or axis, as it so frequently does, through contraction and displacement of the pupil, altered curvature and position of the lens, or cyclotropia, though I must refrain from a digression into this interesting and important subject.

THE CONSERVATION OF VISION.

Aaron Brav, in the *New York Medical Journal*, says the appreciation of light, the recognition of form, the perception of depth, the differentiation of color, the entire conception of the Mosaic order in space, elements psychic in their nature, depend entirely upon the sense of sight perceived through and stimulated by the various structural elements of the visual apparatus. The external world becomes intelligible to us only through the visual junction. In the transmission of thought from person to person, the visual junction is the chief medium. What wonderful transmission of thought in this modern world takes place through the act of reading! This act depends upon a visual phenomenon. Through this means we are set in communication in a few hours with the whole civilized world. Savage as well as civilized man for subsistence must rely upon his visual power. Vision is a complex phenomenon and the visual apparatus is a wonderful structure from Nature's own workshop, so constructed as to suit all conditions and environments. To the savage hunter it gives the necessary distance range; to the civilized bookman the essential near range of vision. Up to a certain age it is a self-regulated piece of optical mechanism, adjusting itself as occasion may require for various distances and sizes in response only to the stimulus of necessity. The psychologist speaks of the visual junction as an "elementary mental process," but this mental process is brought about by a physical stimulation. In fact, every psychic process is the direct result of some physical stimulation which reflexly reaches the psychic centers situated in the brain, producing that phenomenon which in psychological nomenclature is termed a mental process. Vision is not an independent mental or psychic center, but is rather the culmination of a physical and physiological act that is finally metamorphosed into a psychic process. Without the previous physical stimulation and the physiological excitation, no psychic process of vision is conceivable, except perhaps through the aid of the imagination a psychic process which can be set into motion by means of the effort and aid of the other senses.

MEDICAL PHARMACY.

OINTMENT BASES.*

DR. EUGEN UNNA.

IT gives me great pleasure to address you on a subject which I hope will be of interest to you. I intend to give, in the form of a critical comparative review, a short summary of the ointment bases which have been in general use up to the present time.

As you know, up to the middle of the nineteenth century, fats of animals and plants were used for the preparation of ointments. Among these fats, mutton-fat and lard played the most important rôles. Lard has always been preferred. While, like lard, mutton-fat is a mixture of the glycerides of palmitin, stearin and oleic acid, in lard the percentage of oleic acid is much higher, and for this reason its consistency is softer and it is blander.

The disadvantages of both fats are that they can not be kept long without becoming rancid, and they can not be mixed, to any marked degree, with alcohol, water, hydrocarbons, and glycerin. Yet this miscibility is the first desideratum of a perfect ointment base. In the middle of the seventies two mineral bases were placed on the market: petrolatum and paraffin. Both products are obtained in the processes of manufacturing petroleum. At that time, with these new bases, it seemed possible entirely to replace the animal fats. Only the fact that it is possible to preserve lard by benzoating it enabled that fat to hold its place among the ointment bases. I may mention here that German dermatologists did not appreciate the benzoated lard for the following reasons: First, the stability was not complete; and secondly, the addition of benzoin resulted, particularly on tender skins, in disagreeable irritations.

When Hebra, the father of dermatology, about forty years ago, raised this science to the position of a special branch of medicine, it happened fortunately that just at that time two new ointment bases, petrolatum and paraffin, found their way into the medical profession. These mineral fats which, owing to their stability and harmlessness, soon obtained an important position in the technic of ointments, are hydrocarbons of the allopathic series. By petrolatum or "vaseline" we understand, as you know, a solution of isoparaffins in liquid hydrocarbons of various combinations. Its melting point does not differ much from the melting point of lard, but in comparison with the latter it is extremely greasy and difficult to remove from parts to which it has been applied. These shortcomings, though, are equalized by a decided advantage; petrolatum can be kept indefinitely. This could not be said of lard, even if the latter was benzoated. This advantage of petrolatum being evident, how about its innocuous effects on the skin, as well as on admixed medicaments?

Petrolatum is generally believed to be stable and immutable. Nevertheless there exist in petrolatum, as you know, several oxidation products such as vasogen, vasoliment, and vaselinum adustum, which show that deterioration of the fat could be possible. Some time ago I investigated with my colleague, Golodetz, different kinds of petrolatum. The idea was to find why certain organic oxidation products after having been mixed with petrolatum lost their activity. We succeeded, partly by using the old sulphuric acid reaction, partly by means of osmic acid, to prove the existence of certain reducing bodies, which, according

*Read at the June meeting of the New York Branch of the American Pharmaceutical Association.

to my opinion, must have a similar constitution to oleic acid. While we may consider petrolatum stable for practical use, we must keep in mind that it often contains reducing bodies, which undoubtedly are able to destroy the action of oxidizing medicaments.

Paraffin is entirely free from this drawback. Petrolatum is a residuum, paraffin a distillate, and is therefore purer. I do not need to discuss here the different kinds of paraffin, because I know that you are absolutely familiar with this subject; their main properties are generally the same. Paraffin ointment really is an ointment base which fulfills all demands for blandness and stability.

The advantage mentioned obtained for petrolatum and paraffin first place among the ointment bases, whilst lard, and even benzoated lard, lost the greater part of its importance. But these ointment bases are not yet the ideal ones. A most important property is still lacking in them to a great extent, that is, miscibility with water and other liquids. Experiments which I have made with the just-mentioned bases have shown that none of them would combine with more than 30% of water.

When in 1885 the adeps lanæ or lanolin was put on the market, this above-stated disadvantage seemed to have been overcome. To avoid misunderstanding I wish to define the terms "wool-fat" and "adeps lanæ" of the Pharmacopœia. The Pharmacopœia of the United States calls adeps lanæ a purified wool-fat. This termination leads us to think that the difference between these substances is just about the same as the difference between crude zinc oxide and the purified zinc oxide. That that is not the case was shown by the thorough investigations which P. G. Unna made about the ingredients of wool-fat and of the so-called purified adeps lanæ or "lanolin." I quote from his report of these investigations the following: "At that time we were entirely in the dark as to the difference between wool-fat and the purified wool-fat, 'lanolin.' We know now, though, what we have to understand under the term 'purified wool-fat.' It is a mixture of the above-mentioned alcohols and fat acids, partly in the free state, partly combined as ethers; it contains outside of this 5 to 8% of natural potassium soaps. When compared to the other fats it is characterized by the following properties: it contains isocholesterin, oxycholesterin, lanocerin acid and lanopalmin acid, whilst glycerin is entirely lacking.

"Lanolin, therefore, is only a part of the natural wool-fat; it contains all the ingredients of the latter, but their quantity is entirely different, for during the process of cleaning wool-fat, the greatest part of all three cholesterins and a large percentage of the lanocerin wax is lost."

We will see that through the method of cleansing used for the adeps lanæ of the Pharmacopœia, we lose its most important constituent. Now it is just on account of this constituent that adeps lanæ has been accepted by the Pharmacopœia. I will prove that the acceptation of the wool-fat in the purified state was a mistake in the Pharmacopœia. After Hartmann, in 1860, and Schulze, in 1872, had proved that the fat of sheep's wool contained cholesterin and isocholesterin, O. Braun discovered the peculiar property in this same fat, of taking up, in a physical way, large quantities of water. Liebreich claimed, in 1886, that the latter property was brought about by the former. Yes; he even went so far as to say that the absorbing quality was a reaction for "cholesterin fats." It is also due to the authority of Liebreich that this opinion, based upon poor experiments, soon found its way into the most important medical text-books. For years it was considered as a fact without receiving the slightest opposition. This was very feasible, for Liebreich gave for

his opinion an explanation which at that time seemed credible enough, but nevertheless was based upon great errors.

The next fault that Liebrich had made was, that he started with the wrong opinion; that is, that the capacity for absorbing water belonged to the cholesterin ethers.

In order to prove this, he used Liebermann's cholesterol reaction, by which free cholesterin, but not its ethers, is shown. Without taking notice of this fact, he simply claimed that this reaction could be used for cholesterin fats. He says: "Cholesterin fats, in which not a trace of free cholesterin could possibly be present, were shown with extreme sharpness by the cholesterol reaction." Taking this second error as a fact, Liebreich examined the human skin, which, as you know, contains cholesterin, on the cholesterol reaction. He showed the presence of free cholesterin, but he himself believed that he had shown his cholesterin fats, to which, according to his opinion, belonged the capacity of absorbing water. He even went so far that he claimed the human skin showing the cholesterol reaction also must contain "lanolin" (adeps lanæ).

We are indebted to the Russian chemist, Lifschuetz, for having discovered, after twelve years of work, in wool-fat the body to which only belongs the power of absorbing water. Thus he enabled P. G. Unna finally to correct the errors of Liebreich, which have been accepted by the pharmacopœias of all nations, up to the present day, as facts. Lifschuetz first isolated the cholesterin ethers of Liebreich and proved that no noteworthy power of absorbing water water belonged to them. Then he discovered his well-known acetic-sulphuric acid reaction on the spectrum of which he clearly could determine the relative absorbing power for water.

He arrived further at the very logical conclusion: "If a reaction shows by its intensity the relative capacity for water, it must necessarily be also a reaction for the very body to which belongs this capacity of absorbing water." In this way he succeeded partly by saponification, partly by alcoholic extraction and fractional distillation, in isolating a body from the wool-fat, which he called alcohol II. *c*, and which forms a group of free alcohols of iso and oxycholesterin. To this group then belongs the water-absorbing power of wool-fat, but it is only contained to a small percentage (about 0.5%) in the crude fat.

The adeps lanæ of the Pharmacopœia contains this important body in a still smaller percentage, as by the peculiar process of purification, just this body is almost lost. P. G. Unna, to whom we are indebted for the thorough investigation of the new body of the oxycholesterin group, discovered by Lifschuetz, eucerin wax, and the new ointment base prepared from it, eucerin, the composition of which we shall consider later, has shown by his experiments that the commercial adeps lanæ has a capacity for from 30 to 200% of water, while eucerin wax combines with 700%. The principal difference in the composition of the adeps lanæ of the Pharmacopœia and the eucerin, or, if I may say so, the improved adeps lanæ, is the following: In the adeps lanæ of the Pharmacopœia the good properties of the oxycholesterin group are sadly influenced by the presence of the high molecular acids and alcohols. In the new ointment base, eucerin, we find the only important constituent of adeps lanæ free from all drawbacks ready to display its action unrestricted. By the addition of 5% of this eucerin wax we are able to combine any fat with an amount of water up to 300% and even more.

Let us now consider the properties of adeps lanæ. Crude wool-fat has a disagreeable odor which even adheres to the purified adeps lanæ. It can not be kept any length of time without becom-

ing rancid. The absorbing power for water is changing with the degree of the so-called purification, for, as I said before, the more wool-fat is purified, the smaller becomes its absorbing power for water. Extreme purification is liable to give you an adeps lanæ which will not absorb any appreciable amount of water.

Another and probably the most objectionable feature is its pitch-like tenacity. This tenacity and also its proneness to rancidity are due to the presence of the just-mentioned acids and alcohols.

You know yourselves how difficult it is for the pharmacist to prepare ointments with adeps lanæ. In order to show you its disadvantages as a medicinal agent, I have to explain first the value of an absorbing capacity for water in therapeutics.

Cooling ointments or cold creams are of great importance to the dermatologist. The cooling effect is brought about by the water which is incorporated into the fat. As you know, this cooling effect is dependent on a physical phenomenon. Water has the property of evaporating. For this purpose it needs heat. This heat it abstracts from the surrounding surface, in this case from the human skin, which is cooled thereby. It is clear, therefore, that the larger amount of water present and the quicker its evaporation, the greater must be the cooling effect.

Adeps lanæ does not take up water readily. The suspended water it gives up slowly on account of the tenacity of the fat. In other words, the cooling effect is thereby decidedly minimized. In eucerin the result is just the reverse, owing to its great affinity for water and its lack of tenacity. Here we have the full benefit of evaporation of the water contained in the ointment, and the long-ventilated question as to a suitable basis for cold cream has found its happy solution in the discovery of this substance.

But in this combination of wax alcohols with mineral fats we will find another very important property. That is, the facility with which the ointments prepared with it can be rubbed into the skin. The reason therefor seems to be of a physical nature and due to the hydrophilia of the oxycholesterin group. When I speak about the concentrated eucerin-mercury ointment, I shall have an opportunity to give you a striking example of this property.

Now we have to ask: "What have modern therapeutics and cosmetics to demand of a perfect cold cream?"

First. It must have a great absorbing power for water; secondly, its fat basis must be unchangeable; and finally, its consistence has to be soft, but not greasy or even sticky. All these properties we find separated in the ointment bases known hitherto, but nowhere combined. Adeps lanæ has a rather great absorbing power for water, but its action is only slightly apparent. It is of great tenacity and stickiness, and its fat basis can not be kept long. Petrolatum and paraffin, although they may be kept long, are lacking in an absorbing power for water, and therefore can not be used for the preparation of cold creams. Lard has the advantage of great softness and blandness, but it does not have the important keeping qualities and the capacity for water.

The compilers of the Pharmacopœia in constructing the formula for cold cream had to ignore the other properties and took into consideration only the softness. They prescribed a mixture of white wax, spermaceti, and oil of almonds, and so succeeded in preparing an ointment base of great softness and blandness. But, as the ability to take up water was lacking, the percentage of oil of almonds had to be increased to such an extent that the keeping qualities became diminished. The result was that the cold cream of one Pharmacopœia did not contain more than 19% of water, while in the cold cream of another Pharmacopœia was combined only 25%.

This has been the situation up to the present day. It was clear that the problem of the cold creams was solved at once when we became able to incorporate with any stable and harmless ointment base a body which gave to it the lacking properties of softness and absorbing power for water. This body is eucerin wax, discovered by Lifschuetz. Only 5 grams of this wax melted together with 95 grams of petrolatum or paraffin ointment form an ointment base of extraordinary softness, which can be kept indefinitely and which may be combined with water up to 500%. Such a great amount of water is desirable, of course, only in special cases. There has therefore been recommended as the cold cream of the next edition of the German Pharmacopœia, a paraffin ointment which contains 5% of eucerin wax and 60% of water, that is to say, more than three times as much as unguentum aquæ rosæ.

We had the same difficulties for years and years with unguentum glycerini, and the successful solution of this problem is also due to the discovery of the new wax alcohols. In spite of the complicated formulas which came into use in the course of years, it was not possible to prepare an ointment base which could be combined with more than 40% of glycerin. However, a combination of petrolatum with 5% of the oxycholesterin alcohols will take up 400% of glycerin.

As the time which I am allowed to speak is necessarily limited, I can not go through the development of the formula for unguentum glycerini of the Pharmacopœia. Therefore, I refer to the thorough investigations of unguentum glycerini cum eucerino by P. G. Unna and P. Unna, in which the question of the unguentum glycerini seems finally to be settled. The formula which has been recommended for the German Pharmacopœia consists of a mixture of 20 grams of anhydrous eucerin and 20% of glycerin.

I may mention here that we have to understand under eucerin wax the group of free alcohols of the iso- and oxycholesterin group. Five grams of this wax together with 95 grams of petrolatum give the anhydrous eucerin, which forms by the addition of a certain quantity of water the eucerinum cum aqua.

I am now going to speak about one of our most important ointment combinations, mercury ointment. The pharmacopœias of all nations have always shown the highest interest in this universal medicament for syphilis. At all times it was the principal idea to prepare an ointment which contained the mercury as concentrated as possible. Let us consider next the formula given by the last edition of the German Pharmacopœia. There we find a very complicated formula which seems to have been brought about with the intention of facilitating the disintegration of the metallic mercury; 40 grams of lard, 25 grams of suet, 5 grams of adeps lanæ, and 1 gram of peanut oil are mixed with so many grams of mercury that an ointment containing 30% of mercury is formed. I do not need to emphasize that besides the small percentage of mercury we have here a combination of all the drawbacks of the ointment bases previously mentioned. The formula of the United States Pharmacopœia had already proved a progress. It contains 50% of mercury, is less complicated, and denotes an effort to increase the keeping properties of the lard by benzoating it. Nevertheless, this ointment also becomes rancid. This disadvantage ought to be strictly avoided, however, as this particular ointment, in mercury inunction, is absorbed by the human skin more readily than any other preparation.

All these disadvantages have been avoided at the Eppendorfer Krankenhaus, the governmental hospital of Hamburg, by introducing a preparation of the following composition: 135 grams of mercury and 30 grams of anhydrous

eucerin were mixed with the subsequent addition of 6 grams of water. The result was an ointment containing 79% of mercury. By diluting with eucerinum cum aqua, an ointment could easily be obtained, the amount of mercury in which corresponded to the formulas of the United States or German Pharmacopœias. The disintegration of the mercury in this formula is very simple, and can be done with great rapidity. But, besides that, we find here another new property. While inunctions made with the mercury ointment of the Pharmacopœia took about twenty-five to thirty minutes, experiments which have been made with the eucerin ointment in German hospitals have shown that five to six minutes were sufficient to make the mercury disappear in the skin.

	Odor	Consistence	Stability	Capacity for Liquids
Lard	existing	very soft	becomes rancid	very small
Suet	existing	rather soft	becomes rancid	very small
Petrolatum	none	soft	can be kept	small
Paraffin ointment	none	soft	can be kept	small
Adeps lanæ	existing	greasy and sticky	becomes rancid	up to 200 per cent
Eucerin	none	very soft	can be kept	up to 500 per cent

In conclusion, allow me to summarize once more the main properties of the mentioned ointment bases in the form of the above table.

It is not the object of this address to give a review of the practical uses of the ointment bases in therapeutics. I have spoken thoroughly about this matter in an address given before the Royal Society of Medicine in London. Therefore, should you be interested, I take the liberty of referring you to that address.

It seems to me by the analysis of adeps lanæ and the discovery and isolation of the very important group of wax alcohols, that we have entered a new stage of ointment technic. It is difficult to say to which of the above-named ointment bases will be accorded the position of greatest efficacy. The most suitable would be lard, on account of its soft consistence. This can only be possible if we should succeed in increasing its keeping properties indefinitely by adding a body which in contrast to benzoin is harmless and which is, on the other hand, of such a character that the ointment base prepared by it does not lose its harmlessness, in spite of the addition of medicaments of any kind.

As long as that is not possible we will have to prefer the stable mineral fats, whether they are called petrolatum, paraffin, or otherwise. Adeps lanæ loses its importance utterly, since we are able to isolate its most precious constituent, free from all the drawbacks of the crude fat. Eucerin wax, finally, is not an ointment base at all, but the long-sought-for body, by means of which we are able to render any stable fat into an ideal ointment base.

TREATMENT OF CONDYLOMATA ACUMINATA (WARTS).

Mt. Pleasant, S. C.

Editor Medical Brief:

I read Dr. David Watson's article on warts in the June number of The Medical Brief, p. 355, with much interest.

For several years I have used a local application of 2 to 3 drachms of creolin (Pearson) to 1 quart of water. A piece of absorbent cotton is wet with the solution and bound to the parts. Renew the application three times a day. The foul odor will diseappear with the first application, and a patient with one as large as a medium-size cauliflower will be cured in two or three weeks, and those with smaller ones in a few days. If the Doctor will use this treatment on a few patients he will never cut or cauterize another.

W. J. Bowen, M. D.

ELECTRO-THERAPY.

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THE TREATMENT OF RODENT ULCER.

By EDWARD REGINALD MORTON, M. D., Tor., F. R. C. S. Edin.

Vice-President, Electro-Therapeutical Section of Royal Society of Medicine; in Charge of the X-Ray Department, West London Hospital.

THE treatment of rodent ulcer is a subject that has a more than ordinary interest for the members of this section. This is due to the fact that rodent ulcer is a superficial condition, in its earlier stages, at least; it is locally malignant, but does not tend to reproduce itself in distant parts. The methods we practice are mostly for local application, and whatever any of us may have to say about their use in the treatment of malignant disease, we can not get away from the unfortunate fact that not one of them gives us the least control over metastasis. Rodent ulcer, being without this tendency, and yet undoubtedly malignant, makes for us a most excellent test of the efficiency of our methods and gives us great assistance in the elaboration of our technique.

The methods mostly in use at the present time are the X-rays, radium, zinc ionization, and solid carbon dioxide. When we consider that the condition is a malignant one, it is astonishing how easy it is to get it to heal over, provided it has not invaded bone or cartilage. In fact, so easy is it that this constitutes a real danger; numbers of cases have been reported as cured that were only healed over without having completely destroyed the disease, and recurrence has set in sooner or later. It is on account of the large number of cases of recurrent rodent ulcer that I have seen during recent years that I feel constrained to bring the subject to your notice.

The causes of this failure to produce more permanent results are not very hard to find. Treatment by any form of radiation depends on the absorption of the rays by the tissues, and according to the extent of the absorption the effect may be anything from a mild degree of stimulation to an intense inflammation. It seems to be fairly well established that the rays most easily absorbed are the most active, and we have in consequence the greatest amount of reaction upon the surface towards which the rays are directed. As we go below the surface the effect of the irradiation diminishes very rapidly, and it is doubtful if the effect we desire in this disease can possibly be produced at a greater depth than one-half centimeter from the surface, short of producing a superficial necrosis.

Assuming these ideas to be correct, we may consider their bearing upon the disease in question. In a typical case of rodent ulcer we get a history of a small spot or pimple upon which a crust formed, and re-formed as often as it was removed, and gradually increased in size. This has been going on for two or three years probably, and at the time we see it the area of the ulcer is equivalent to that of a threepenny-piece, more or less. While it tends to increase its area more rapidly than its depth, processes are sent downwards to an extent that has an important influence upon the future of the case.

If we use the X-rays or radium the radiations absorbed superficially are so efficient in dealing with this condition

that we get the ulcer healed over before the deeper extensions of the growth are properly dealt with. They are left in a state of what might be termed suspended animation, decreasing in degree as the distance from the surface increases. This is even more marked if the case is treated with zinc ions. The salts of zinc and other metals make a superficial layer of albuminate no more than 1 or 2 mm. thick, through which further ions pass with great difficulty, if at all. The two cases of recurrence in the shortest time—under three months—that I have seen were treated by this method.

In a case of recurrence after one or other of these methods of treatment, we may safely assume that one or more processes from the growth have been extending well down from the surface, and the further from the surface the less it has been affected by treatment. It is thus at the lowest point of the growth that operations are first resumed, and as the patient usually does not seek further advice until there is a superficial sore, we find a condition of things that is quite characteristic. Instead of being broad and shallow like a saucer it is now narrow and deep; and if we clean it out with a sharp spoon we shall find that it extends more deeply and widely than its external appearance suggests. The shape of the ulcer is now more like the interior of a Florence flask than a saucer, and the difficulties of efficiently treating such a condition with any form of radiation or ionization are quite apparent.

It is a matter of common knowledge among radiologists that numbers of complete and satisfactory cures of rodent ulcer have been made by all of the first three methods I have mentioned. I have used them all myself with at least average success; one of the first cases healed by radium was referred to me by Mr. (now Sir Frederic) Eve in 1903. It was of fairly large size and the amount of radium used was small and of only moderate activity. Some sixty applications were given in all, and the case was apparently cured. Being a sailor, he was not located later to find out his subsequent history. This, however, is by the way; what I wish to point out just now is that I have not come here this evening to decry the use of methods that have served us well in the past, but I am sure it will be agreed that we do get a certain number of recurrences no matter how carefully we do our work. It is with the object of reducing the number of these recurrences that I am going to ask you to give a more general trial of a method that seems to promise well.

It was about the time I took up the use of solid carbon dioxide that my attention was particularly drawn to these recurences, but I hesitated to use CO_2 until my experience with the method had been more extensive. I began to use it just two years ago, and I made a preliminary note in *The Lancet* of July 9, 1910, p. 130, of my first three cases, which were shown at the London meeting of the British Medical Association at the end of the month. These results were considered very satisfactory by all who saw them. Up to a few weeks ago there was no sign of recurrence. In the first case of all the crayon was not quite large enough to completely cover the ulcer at one edge, but I left it to see what would happen. The ulcer measured ¾ in. by ½ in., and it was completely healed on the twenty-first day—the untreated edge closing in as quickly as the others.

The results have been so extremely satisfactory in every way that from that time I have used no other method for treating this disease. I have now treated 27 cases, and so far as I know there has been but one recurrence. In this one I again purposely left a small part uncovered by the crayon. Though it all healed over rapidly the patient came back eight months later with a recurrence at

this point. It was quite small, and a single application removed it.

My experience so far justifies me in saying that any case of rodent ulcer that is superficial, and has not invaded cartilage or bone, can be completely cured with a single application of this substance, and that the result will easily bear comparison with any form of radiation or ionization in regard to appearance, and I am equally confident that time will prove it to be even more permanent. I will describe a typical case.

On December 1st last a patient came to me (sent by Mr. J. S. Curgenven) with a rodent ulcer over the right malar bone. It was of two years' duration, of irregularly circular form, and its area equivalent to that of a sixpence. After cleaning the surface with a sharp spoon I applied the carbon dioxide. A thin slough separated on the fourth day, and the healing process was well established on the eighth. On the fifteenth day it was completely closed over, leaving scarcely a trace to show what had been there for so many months before. Of course, it is too soon to speak of permanence in this case, but it serves as an example of many I have done before and since, and except for the one mentioned I have had no recurrences so far as I know.

It may be asked upon what grounds I consider carbon dioxide an eminently suitable remedy for rodent ulcer. In the first place I have satisfied myself that there is little risk of producing necrosis of normal tissue by any application used in treatment, and also that it is quite easy to bring about the destruction of certain abnormal tissues—rodent ulcer among them—by the same means. I do not say that freezing by solid carbon dioxide has a "selective" action on the abnormal tissues; in fact, I consider that such a term should not be used respecting a physical agent of any kind, since it conveys a wrong impression to most minds. The vitality and resisting power of abnormal cells are less than the normal; no other explanation is required. If we heat some fragments of zinc and copper in a crucible we know that the zinc will melt first, and may be oxidized and consumed before the copper relinquishes its solid form. I have never heard it said that heat had a selective action on zinc or any other substance. I think the analogy is sufficiently close to show that the term "selective" is one we should not use in this connection.

Another reason why I prefer carbon dioxide is that it is possible to get the efficient reaction we require more easily and more quickly by it than by any other means, and to a sufficient depth to make recurrence a much more remote event. The depth of the freezing is regulated by the time and pressure, and it is found quite easy to carry this far enough to encompass the region invaded by the average rodent ulcer. While the intensity of the freezing decreases with the depth, starting with a temperature of —79° C. there seems to be ample margin, since it does not appear that the reaction is materially influenced by a reduction of temperature beyond a moderate number of degrees below zero. It is the depth of a rodent ulcer that determines the ease with which it can be cured, and if cartilage or bone is involved it is really difficult.

The most obstinate cases I have had lately were recurrences, one of them after being apparently cured on three different occasions, first by the X-rays, then by zinc ions, and lastly by radium. On each occasion the work was done in the best possible manner. Owing to the depth to which the disease has now reached it is worse than ever it was and more difficult to treat with success. Yet with the use of carbon dioxide previous experience leads me to think I shall overcome it, though it will take time and several applications. At the present time (May 13th) this case is closing up rap-

idly and has every appearance of being completely successful.

During the last few months I have had two cases that had been healed over by the X-rays alone. In each of these I found that the disease had extended far more deeply and widely than the external appearances would lead one to expect. I have seen these cases once a week, and after cleaning out the ulcer with the sharp spoon the carbon dioxide was applied thoroughly to every part. This procedure is persevered with until every trace of the disease is removed and the whole area has a healthy appearance. This may take several weeks, and of this the patient should be warned, as also of the fact that to him the ulcer will be very much worse during this stage. When healthy reaction sets in properly there is no mistaking it, and ultimate healing is a matter of a few weeks only. Both these cases have healed over very satisfactorily except a small point of exposed cartilage on one of them, for which a small plastic operation may be necessary. I feel confident, however, that the disease has been eradicated.

There is another reason why I wish to put forward carbon dioxide as a regular method of treating rodent ulcer. It is well known that when recurrence follows treatment by radiation the tissues have been in some way altered, and they no longer react to the rays as they did at first; so much so in some cases that another method must be tried. I have satisfied myself that under these conditions carbon dioxide will act with its usual efficiency, and also from experience in treating thick, fleshy moles, where several applications are sometimes necessary to get them level with the surrounding skin, I have found that previous applications make practically no difference in the reaction that follows. Apparently no permanent alteration takes place in areas formerly treated by this method, excepting, of course, a certain amount of fibrous tissue developed as a result of the inflammation. We need have no fear of anything in the nature of telangiectases, such as frequently follow the use of the X-rays and radium.

As I have stated, I have now treated 27 cases by this method. I have treated many other cases by other methods, but I have come to the conclusion that solid carbon dioxide is the best of them all, both for the original ulcer and for the recurrences that follow other methods. Up to the present in my hands recurrences after treatment by this method have been conspicuous by their absence. I do not say that such will not take place; it is not only too soon to say anything of the kind, but this would be against all human experience. My original cases have remained well for two years and seem as perfect as one could wish for at present. There are no serious objections to its use in this disease. It is simple, rapid in application and in result, as well as thoroughly efficient—I believe it to be more uniformly efficient than any other means at our disposal.

It will be, of course, understood, that I refer only to such cases as come within the province covered by our methods. Severe and extensive cases requiring the interference of the surgeon are outside the scope of these comments.

AN IMPROVEMENT ON ROENTGENOSCOPY.

Dr. William H. Dieffenbach shows some very fine pictures in the *New York Medical Journal* of March 21, exhibiting the possibility of making prints of X-ray pictures in which fine detail is available. These pictures illustrate the value of these pictures in the diagnosis of renal and vesical calculi. The technic of making these plates is as follows:

1. Lumiere X-ray and slow plates are employed.

2. Heavy anode tubes, 6-8 Benoist penetration, are used, exposure depending upon the lesion to be rayed. With the solace apparatus we expose from two

to eight seconds for calculi, while one to two seconds' exposure is given to thoracic or small-joint pictures. Instantaneous work is not favored, as it has been found that detail is often lacking in the plate upon too rapid exposure, while a second or more of exposure does harm neither to the tube nor to the patient. The meter is usually held at 30 m. a. through the tube.

3. Indirect rays are eliminated as much as possible by the use of the compression diaphragm and the loofa pad filter.

4. The plate is developed, fixed, washed, and dried in the usual manner, excess of contrast in development being avoided.

5. A positive is next made from the negative plate, using a slow plate and exposing same in the printing frame carefully. Fogging is avoided and the attempt is always made to secure equal density.

6. Both plates, when dry, have their glass surface carefully cleaned and these are then placed together, making the outlines register accurately by holding them up to a good north light. When good approximation has been secured, the plates are firmly bound together with lantern-slide binders.

7. These joined plates are now placed in the printing frame, using the positive side to print from and employing a slow bromide glossy paper (carbo and portrait argo). Exposure is regulated according to the character of the light, the frame being placed at an angle of 45° in a north light.

8. The paper is next developed in an antifriction developer, rinsed, fixed in a fresh hypo bath, and when washed is ready for mounting.

If permanent records on plates are desired another plate must be made from the plates as above described (instead of paper) and the prints can be subsequently secured from a fourth plate taken from the third. Thus plates one and two, as described before, furnish plate three; from plate three the fourth plate is secured, and the latter is the permanent record for subsequent prints.

This latter detailed technic (excepting differences in exposure) is the method originated by Dr. Béla Alexander, of Hungary, to whom due credit is accorded.

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ARTERIAL HYPERTENSION.

Josul, in *Medical Notes and Queries*, states that arterial hypertension may be the cause of various troubles. While it occurs frequently among the arteriosclerotic it is far from being constant among them, and in many cases too much stress is laid upon this symptom. Certain authors would lead one to think that hypertension constitutes all of arteriosclerosis, and the same exaggeration is found in the therapeutic procedure of these writers. They continually have the elevation of arterial tension in mind and all their efforts are turned toward this end. But hypertension is not all of arteriosclerosis. Having made this reservation, one can not deny that many arteriosclerotics with high tension are improved when the blood-pressure is reduced, and many cases are treated from this standpoint. Sometimes normal or nearly normal tension is subject to sudden transitory rises, and this passing hypertension at times appears in the form of vascular attacks —(Pal.) At other times, hypertension is continuous and remains at a high level; the first sort of case yields to treatment more easily than the second, for some forms of chronic hypertension are incapable of being reduced. Some subjects habitually have a systolic pressure of 19, 20, or even 21, without presenting any other pathological features; these cases should be closely observed, but it is not necessary to put them under severe treatment, the general directions

as already given for arteriosclerosis applying as well to these cases of hypertension.

High-Frequency Currents—Following up the experiments of d'Arsonval, who proved the depressing effect of alternating high-frequency currents on arterial pressure in animals, Moutier and Challamel claim to have obtained a rapid reduction of arterial pressure among arteriosclerotics by submitting them to the same electric influence, the patient receiving the currents in an auto-conduction cage, for five or ten minutes, two or three times a week. Moutier claims that the pressure was always reduced to normal after a certain number of séances and that this reduction was maintained for weeks anad months, and even for three, four and five years after treatment. Unfortunately, the brilliant results achieved by this writer have not been confirmed by other authorities. While Chanoz and Doumer, at the Congress for the Advancement of Science, in 1906, admitted this hypotensive action of the treatment, Widal and Vaquez, on the strength of their personal observations, expressed themselves more reservedly. Since then Delherm and Laquerrière, Apostoli and Dignat, Bergonié André Broca and G. Ferrier have arrived at similar negative conclusions, and I, myself, have never been able positively to verify the reduction of pressure, neither immediately after a séance nor subsequently. Moreover, it must be remarked, that arterial pressure in arteriosclerosis with hypertension is far from being as well established as is generally conceded. I have shown that there is frequently a spontaneous reduction of several centimeters of mercury from one minute to another, or that such reduction may be due to some emotional influences or may be caused by so slight a thing as the application of an ice bag to the nape of the neck.

High-frequency currents do not possess the powerful action on arterial pressure generally attributed to them, although I have observed that after a séance in an autoinduction cage one can frequently see a slight improvement notably of functional derangement, such as slight indications of arteriosclerosis, dyspnea, cephalalgia, etc., and it would seem that this improvement is genuine, and not merely due to suggestion, and it is still more marked if the treatment is given with the patient lying on a condensation bed.

Medical Treatment—The good effects of iodides have been ascribed to their hypotensive action on arterial pressure, but I have never been able to verify these conclusions. *Nitrites*, in a general way, do possess the ability of reducing arterial pressure, but their effect is evanescent and the modifications are not maintained long after their application. Of these the action of *amyl nitrite* is the most prompt and most energetic but, at the same time, the most transitory. It is kept in glass capsules containing three to six drops, and when required for use the capsule is crushed in a handkerchief which is quickly held up so that the patient may inhale the fumes. Almost immediately the blood rises to the face, the eyes become congested, the heart beats are rapid and strong, the pulse is quick, and energetic pulsations are visible in the temporals. The action begins at the end of six or seven seconds, reaches its climax in about fifteen seconds and ceases after twenty-five to fifty seconds, and arterial pressure is reduced several centimeters of mercury, the fall going down as low as seven centimeters. I have shown that this reduction, at the same time, acts on the systolic and the diastolic pressure. Thus we see that amyl nitrite is an emergent whose energetic and transitory action is useful only in acute and menacing crises. I should add that the improvement in functional symptoms has been known to persist for some time after the objective effects of the remedy have ceased.

RADIUM EMANATION IN MINERAL WATERS.*

By T. Pagan Lowe, M. R. C. S. Eng., L. R. C. P. Edin.

Surgeon to the Royal Mineral Water Hospital, Bath.

The year 1903 was an important one in the history of balneology, for then it was that Ramsay and Soddy demonstrated that helium was one of the products of the disintegration of radium. In the same year Professor R. J. Strutt discovered radium in the deposit of the Bath waters. In the same year again the late Lord Blythswood published in *Nature* the fact of the radio-activity of the gases from the springs of Bath.

In his presidential address to this section in October, 1909, my friend, Dr. Leonard Williams, attempted to redress the balance between science and empiricism, which in matters balneological and climatological had, in his judgment, too long shown a bias in favor of the latter. The burden of his argument, as it seems to me on reading that address, was that the methods which we employ exercise an influence upon the internal secretory glands, and he brought a considerable mass of evidence in support of his theory. He did not, however, offer any explanation as to how and by what means these internal secretory glands were influenced by such methods. I think the time has come when we can afford to venture a step further by suggesting that the means by which our results are produced are in some cases, at any rate, brought about by radio-activity.

In his recent report to the Bath corporation on the subject of the radio-activity of the waters, Sir William Ramsay prefaced his remarks on the purely local aspect of the matter by a little explanation of the present position of our knowledge of radium. I feel sure that a good many members of this section must be in a similar state of ignorance to that in which I unfortunately found myself, so I make no excuse for prefacing what I have to say by quoting briefly from Professor Ramsay's report. Radium is a very unstable element, continually changing into another body, also elementary. During this change it parts with helium, each atom of radium furnishing one atom of helium. Having shot out its particle of helium, the atom radium, Sir William Ramsay tells us, is no longer radium, but a gas to which he has given the name of niton, but which was first known by the cumbrous name of radium emanation. The potency of radium depends upon its niton. There is not time to go into the life-history of niton, but I would refer those interested in the subject to the very clear account given by Sir William Ramsay in his "Report on the Mineral Water of Bath," copies of which I am able, by the courtesy of the corporation of Bath, to distribute tonight. Suffice it to say that what is called the "half-period" of decay for niton is about four days, so that practically in about a month it is all changed. As its metamorphosis proceeds niton gives off certain solids named radium A, B, C, D, etc., and during the change of radium into niton B rays are evolved, and it is these which are used for therapeutical purposes.

While alpha rays—that is, atoms of helium—like other gases, can be confined in glass or metal vessels, beta rays pass through; the amount passing naturally depends on the thickness of the walls of the vessel. The alpha rays, for example, confined in a glass tube, do not pass through the glass; the beta rays do pass through, and by interposing metal screens of foil of different thicknesses a greater or smaller quantity may be allowed to impinge on the skin. A third class of rays is also evolved during the emission of the beta rays which have been termed gamma rays. It is not decided as yet what is their true nature.

*An introduction to a discussion at a meeting of the Balneological and Climatological Section of the Royal Society of Medicine on April 17, 1912.

They have great penetrative power; indeed, three inches thickness of metallic lead is not sufficient entirely to stop them. They, too, are sometimes employed for curative purposes. It is suggested that they more resemble rays of light; that they are not "matter," but waves in the ether which surounds and interpenetrates all matter. The continuous dissolution of the element radium into other elementary states (for those of us whose chemical education dates back more years that we care to acknowledge) is not very easy to accept, but it suggests to me a comparison. It is a *disintegratio ad integrum*. Remembering the transformation of insects, we may say that the chrysalis radium, casting aside its inert shell helium, becomes the imago niton.

Another product found in mineral water is neon. In the gas given off by the Bath water it is present to the extent of 188 times as much as is contained in atmospheric air, an amount which Ramsay describes as astonishing. Neon is also supposed to be one of the products of radium, but possibly further investigations may show it to be one of the results of the disintegration of some other radium-like element which has not yet been discovered.

The radio-activity of all mineral waters exists only at the source, and such waters rapidly lose this quality. Nevertheless, it is possible by artificial means to render them permanently radio-active. Does the therapeutic potency of natural mineral water depend upon niton alone, or is the credit to be divided between it and the other, the chemical constituents —that is, with those constituents which we have till now endowed with the entire beneficence? We are told that radio-active waters can be prepared by adding 1 milligramme of radium sulphate to 1 litre of distilled water, which can then be used as a subcutaneous injection without harm. Is this artificial water as potent as natural radio-active water, or does it more quickly lose its acquired qualities? Can the radio-active water, as we find it in our springs, be used as a subcutaneous injection with advantage? These as well as other questions, present themselves for our consideration. Such, for instance, as those connected with the statement that niton, although it has the power of rendering all substances radio-active, can not itself, according to some authorities, be absorbed by the skin. If this were true it would seem that bathing, as far as any special benefit from the radio-activity was to be obtained, was at a great disadvantage. But a little more consideration modifies this view. In addition to the immediate relief which experience tells us occurs from mineral water baths, such, for instance, as increased mobility and lessened pain, the patient is in the best position for taking the full advantage from niton. The orifices of the body are soaked in it, and the surrounding air is more or less saturated; and thus when the patient is in the bath, with his nose and mouth just above the surface of the water, he must be most favorably situated to reap the benefits of the induced radio-activity. Moreover, contrary to the belief of those who say that niton can not be absorbed by the skin, Professor Lazarus is of the opinion that it can, and in this he is supported by Ramsay and others.

In the administration of baths much longer periods of immersion seem to be called for, and I have no doubt that the custom of spending many hours in the bath, as is the custom at Leukerbad and other resorts, has a good deal to recommend it. The large public baths, as used there, however, seem to be inadvisable; and I can not but think that the small bathroom, due regard being, of course, given to ventilation, is preferable. The probability is that niton is none too strong, and we want to concentrate—perhaps to augment it—as much as possible.

Some authorities are of opinion that natural waters are not sufficiently radio-active to be of much service therapeutically, but on this question of their potency there are very conflicting views, and Professor Farr, of New Zealand, in an interesting discussion on the effect of radio-active spring water on trout refers to radium emanation as a gas which physically is a hundred thousand times more active than radium.

Hitherto, details of the effects of niton given off at the fountain head are not very numerous, notwithstanding the immense amount of research which has been made with regard to radium and artificially prepared radio-activity. It is urgent that those of us who have access to natural radio-active waters should fill up the deficiencies. Fortunately at Bath the waters are sufficiently charged with niton for all purposes, and may be considered saturated, and we have 500,000 gallons coming up daily at a temperature of 118° F. There is also available more than 5,000 litres of gas.

Has the presence of niton any subtle action on the salts of magnesium, sodium, lime, and so on, which are found in indifferent waters, rendering them more absorbable or potent when brought into contact with mucous membrane? The free absorption of radio-activity by mucous membranes and by the lungs will probably alter our treatment by those routes, and we shall in the future rely upon them much more. Inhalations will be more frequent, and drinking more resorted to, for longer time and in greater quantity. The same, too, will apply to vaginal and rectal douching. This latter, the so-called Plombières method, is very popular at the present time at certain spas. Certainly, its effect in suitable cases is very striking. It is also almost certain that the future will see a great increase in the combined use of electricity and radio-active waters.

Sir William Ramsay, in his most lucid and able report, from which I have already quoted, referring to the ingenious spraying machine invented by Mr. Jones, the engineer to the bathing establishment of Bath, for use in throat and eye affections, suggests that the natural gas should be used instead of the mineral water. If this were adopted—and I have no doubt it will be—Ramsay is of the opinion that "an agent, nearly twenty times as potent, would be available." He also thinks that in a similar way niton might be applied directly in the treatment of local rheumatism, especially if the patient were insulated and connected with the negative pole of a battery. In this report he further outlines a method by which the intake of niton could be very much increased by giving electric baths with a continuous current. "If," he says, "the patient in the electric bath were connected with the negative pole of a battery giving, say, 100 volts potential, or even more, and the other electrode were placed in the water, of course not in contact with the bather, the niton would rapidly reach the skin." It is, indeed, not unlikely that it would enter the system by so-called ionization, and in this way a considerable dose might be given.

In the estimation of the value of natural water it is necessary to estimate the degree of its radio-activity, the contained volume of gas, and the amount of helium. Although helium is therapeutically useless—nevertheless its presence is an indication that we are dealing with a radio-active water. At the King's Well at Bath Lord Rayleigh found that there were 12 volumes of helium in 10,000 of the water, and some of the foreign mineral waters have been examined by Ramsay and others. Ramsay has found it impossible to compare these amounts with statements of the radio-activity of foreign waters, for the latter are stated in uncertain units and could only be determined in the special apparatus employed by the foreign scientists.

No introduction to a discussion on the subject we are joining in tonight would be complete without some reference to the valuable work of Professor His. He administers niton by means of a portable apparatus, and supplements its effects in certain cases of rheumatism by an injection of an insoluble, or repeated injections of a soluble salt of radium in the immediate neighborhood of the affected joints. His's article on the treatment of gout and rheumatism in the *British Medical Journal* unfortunately lacks full details of the exact method of the administration of niton. He tells us that under its influence the blood loses its uric acid within a few weeks, but the way, the time, and the dose are somewhat vague. What we require as practical balneologists is to learn how we can best utilize the niton for the benefit of our patients. It seems probable that radium emanations have a specific action on gout, and it is in cases of this disease that we may expect some of our greatest successes.

In an article by W. H. B. Aikins and F. C. Harrison, published in the *Canadian Practitioner and Review* last August, on the "Present Status of Radium-therapy," the results in general are summarized as follows: (1) Greatly increased diuresis and excretion of uric acid; (2) largely increased carbonic acid exhalation, from 20 to 60%; (3) lowered blood pressure, especially in arterio-sclerosis; (4) decreased blood viscosity; (5) great improvement of gastric and duodenal digestion; (6) marked solvent action on gouty deposits; (7) the dislocation of uric acid and its salts into carbon dioxide and ammonia; (8) inhibition of inflammation and relief of pains in rheumatism; (9) increase of sexual vitality; (10) considerable influence over sympathetic nerve affections; and (11) marked results in diabetes, albuminuria, and glycosuria. All of these results I am able to confirm from personal observation in Bath, and I would add the rapid disappearance of indican from the urine.

A good deal of further work on the subject comes from Germany. It seems that the Kreuznach waters are highly radio-active, and the local physicians have been studying the results of their applications in various conditions. Substantially their conclusions coincide with those just quoted, but some further information in the matter of contraindications and best form of administering the emanations is now available.

So far as contraindications are concerned they do not at present appear to be very definite, but there are observations enough to warn us that they certainly exist, and that, to say the least, some cases demand very great caution in the application of the remedy. Thus Meternitzky, of Kreuznach, says that he has found application of radium emanation to cause not only subjective symptoms, such as dizziness, fullness of the head, faintness, pains in the joints, but also objective phenomena, such as emaciation, albuminuria, and even hematuria. This, as coming from a physician practicing at Kreuznach, would be a very valuable testimony even if it stood alone. But it does not. Several others who have studied the question, notably Davidsohn, who, working with an artificial radium-producer and not with mineral waters, found that rheumatic and gouty patients after radium treatment experience violent pains in the joints and aggravation of other symptoms. This is particularly interesting to balneologists as affording an explanation of what we are all so familiar with—namely, an acute exacerbation of gout soon after treatment has commenced. Other observers have described considerable rises of temperature, hemorrhages from the mucous surfaces, and the like. It would be interesting to me personally to find any confirmation from other radio-active spas of the experience of everyone who has ever practiced at Bath, to the effect

that both baths and waters are definitely contraindicated in a case where there is any suspicion of tuberculosis. Löwenthal considers that chronic nephritis, particularly of the contracting kind, affords a definite contraindication for treatment. It is probable that at least some of the accidents and inconveniences which have been described as resulting from treatment by radium have been due to the ignorance under which we still labor on the subject of doses. I may say here that a serious disadvantage to radium research and the application of radium is the absence of a general uniform standard of measurement. Neither the counting by Volt unit nor that by Maché unit is uniform in itself, as these units differ according to the different apparatus used. At the suggestion of Löwenthal the Radiological Congress, at the Brussels meeting last year, appointed a committee which accepted as a unit the action of 1 gram of radium. It is hoped that this proposed Curie unit will bring order into the present confusion.

Concerning the method of administering radium, the German authorities do not agree with the views of those who attach a subsidiary importance to the balneary treatment. Thus Kemen says: "In the bathing method a certain part of the emanation passes through the skin into the blood, as was conclusively proved by Engelmann. It is also well known that during the bath the emanations readily find their way into the pulmonic circulation. Yet the bath appears to have a third mode of action in addition to these two; for, on the one hand, the fact of a very marked improvement subjective and objective is well known, yet on the other, the quantities of radium available by the pulmonary and cutaneous routes are much too small to account for the results." What this third mode of action may be it is impossible to say at present; but we should do well to bear this view in mind lest in our enthusiasm for drinking and inhalation, whose action we happen to understand, we be led into neglect of the time-honored method of bathing, the detail of whose action is still insusceptible of explanation. We should not reject it merely because we are unable to explain it. For we must remember that there is still a great deal about radio-activity and its therapeutic action which we are unable to explain. We can not explain, for example, by what processes it produces its therapeutic effect. If we may rely upon the work of German authorities, its action is in no sense bactericidal. We know further that it stimulates metabolism, but by what process it achieves this is not clear. It may be, it is indeed probable, that the suggestion of Dr. Leonard Williams may yet prove to be correct and that the stimulation is effected by way of the internal secretory glands. The statement that radio-activity is not bactericidal is not universally accepted. Later investigations by Lazarus Barlow seem to show definitely that it is decidedly bactericidal. But whether this action is sufficiently intense in mineral waters, or even in the gas from such waters, to be of service has, as yet, not been proved. After all, this would seem to be a minor point, for as far as present knowledge goes it is improbable that bactericidal qualities, as we understand them, are the explanation of the benefit that is derived from mineral water treatment in such diseases as gout and fibrositis.

From my own personal experience I have little to add that is of value. It seems that we balneologists are like the man in Molière's play who was delighted to find that he had been talking prose all his life. We in Bath and elsewhere have been using radium all our medical lives, and we are proportionately uplifted. But we can not say which of our results have been due to the radio-activity of the waters and which may be accounted for by the douching, massage, and other measures upon which we have so long

relied. Nevertheless, I should like to confirm from my own observation some of the clinical results that have been reported by certain observers.

The experiments by Wickham and others show that radium is destructive to the gonococcus, whilst the literature of gonorrheal arthritis shows that the cure of this disease is usually tedious and tiresome by medical means. Nevertheless, some of our greatest successes in Bath have been with patients suffering from it. I have always in addition to the mineral water given them iodide of potassium, and it is a significant fact that the salts of potassium are radio-active, giving off beta rays, that is the valuable ones in the medical uses of radium. It may be that the action of potassium in gout and fibrositis is due to radio-activity, and that metabolism under its influence is stimulated.

In connection with gonorrheal arthritis it is interesting to note how remarkably well cases of iritis do with mineral water treatment. We have patients sent to us with recurrent iritis who rapidly improve and, what is still more important, do not usually relapse. Mr. W. M. Beaumont, who has seen a considerable number of these cases, doubts the very existence of rheumatic iritis at all, and believes the cases we see in Bath are almost entirely gonorrheal, and that those which are not are due to some other form of toxemia.

Experiments by Wickham and Degrais show that radium is not, strictly speaking, bactericidal, but that it so modifies the culture medium as to make it inimical to the growth of the gonococcus. They are of opinion that one-millionth part of pure radium in water will act on the culture. If these views are corroborated it is probable that in the near future the whole treatment of gonorrhea and its sequelæ will be revolutionized. Gonorrheal ophthalmia at once strikes one as a disease in which some confirmation of these hopes should be sought for.

During the last few weeks I have been treating an old lady, aged seventy-five, suffering from a long-standing atrophic scirrhus of the left breast by exposing it to the gas from the Bath springs. The ulcerated surfaces were exposed for ten minutes daily, and after twelve applications all the ulcers had healed and some of the surounding induration had disappeared. This is the first case, I believe, of malignant disease in which the gas has been used in this way. A single case is, of course, of no very great value, nevertheless it encourages us to repeat the experiment, let us hope with equal success.

I have here a radiograph taken at the Bath spring which may be of interest. I also show you two glasses, one that has been in use for several months and the other for five weeks, which demonstrate the staining effect of radium. You will notice in the fractured specimen that the staining has gone quite through the glass, which would not have been the case of it had been caused by iron. Furthermore, I have Sir William Ramsay's authority for stating that this discoloration could only have been produced by radium.

I must not take up any more time with vague thoughts and random speculations regarding a subject the importance of which we probably have not yet fully grasped. The discovery of radium with its far-reaching effects on every part of the human economy has altered our views fundamentally with respect to balneological treatment. A more scientific era has dawned. Time was when a suspicion of a man's professional integrity was raised if he called himself a balneologist; but now, instead of groping in the shades of night, our landscape is illumined by the sunshine of science, and we march along with firmer footsteps and with head erect. And as old ideas go the way of all things human, our grouping of springs into saline and chalybeate, into purgative and alkaline,

and so on, must now be amended to include those which are radio-active. Let us hope that any new classification will rid us forever of the somewhat sinister name of "indifferent waters," for they are no longer indifferent.

One final word more with regard to radium. Many of us believe that in this element we have found the explanation of the therapeutical effects of mineral water, but beyond a declaration of our faith we dare not at present go. It is a postulation that would explain the accumulated evidences of the ages. Every bio-chemical fact concerning it dovetails with the clinical effects of its application. Is it, then, any wonder that we balneologists regard radio-activity as the unknown god, and the blind worship of ages and the empirical faith of centuries as justified? To us the unknown god and his shrine are alike worthy of our homage.

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THE X-RAY TREATMENT OF CLIMACTERIC HEMORRHAGES.

The *International Journal of Surgery* calls attention to the use of the Roentgen ray in the treatment of uterine fibroids and gives reasons based upon personal observations for the belief that this method has great therapeutic possibilities. Recently a number of reports have appeared chiefly from German clinics, and it would seem that sufficient has now been accomplished to justify American gynecologists in taking a more active interest in this agent.

According to Albers-Schoenberg, Gauss, Kroenig, Graefenberg, Falk, Bordier, Titus and others, the X-ray is capable not only of speedily controlling the metrorrhagia in cases of uterine fibromyomata, but also of effecting a considerable reduction in the size of the tumor and sometimes its almost complete disappearance. From observations made in the clinic of Prof. A. Doederlein in the last year and a half, it appears that Roentgen therapy is to be regarded as an important auxiliary in gynecological work. Dr. F. Weber, who presents the report (*Münch. med. Wochenschrift*, No. 14, 1912), was particularly impressed with the efficiency of the ray in arresting true climacteric hemorrhages. He says that the fact that of forty-nine cases only one proved unamenable to its action is in itself strong evidence of the value of this method. Excluding one failure, seven cases in which the later history was unknown, two which remained under treatment for only a short time, and eight still under observation, thirty patients were discharged cured, an equally good showing as to the permanency of the results. When it is considered that these cases were observed in a prominent gynecological clinic, that they were of marked severity, and that in most of them various other means had been employed without success, and hysterectomy seemed to be the only resource, there is no room for skepticisms. The effect was manifested in general as follows: In some of the women, chiefly those above forty-six years, complete amenorrhea resulted, while in those below this age menstruation either took place regularly, but not in its former profuseness, or slight hemorrhages recurred from time to time. Care was taken in all these cases to determine that no malignant process was the cause of the bleeding. As has been likewise noted in the X-ray treatment of uterine fibroids, the best results were achieved in women in the early or late climacteric period.

In spite of the adverse views of von Herff and some other observers, we believe that the time is fast approaching when the Roentgen ray will be accorded a definite place in gynecological therapeutics. To permit of a fair comparison with surgical measures this method must be employed by one who is thoroughly familiar with its technic and who has acquired the necessary experience to use it with discrimination.

X-RAY IN STATICUS LYMPHATICUS.

Rachford holds that in the X-ray treatment of status lymphaticus in infants and young children, although no portion of the body is exposed to the influence of the rays except that which directly holds the thymus gland, we have as a result of the treatment:

(1) Decrease in size of the hyperplastic thymus, with the disappearance of the cough, stridor and asthma.

(2) Decrease in size of the enlarged spleen and lymph-nodes.

(3) The exhaustion and general feebleness of constitution gives way to normal conditions of health and strength, and physical and intellectual growth are greatly stimulated.

(4) A rapid disappearance of the marked lymphocytosis which characterizes the disease.

(5) Excessive physiological action of the thymus gland is controlled. Rachford also considers that the disappearance of the lymphocytosis under the X-ray treatment of the thymus gland is so marked that a careful study of the blood-state in this condition will give important information as to the efficacy of the treatment and the length of time to continue it. It may be wise to discontinue treatment when the lymphocytosis disappears, even if the cough and stridor remain. He suggests the hypodermic injection of iron with careful feeding and fresh air after the X-ray treatment. Rachford reports two cases which are also included in Lange's series.

Lange reports completely four cases of simple enlarged thymus without any symptoms of status lymphaticus. He also mentions three other cases. All the cases were characterized by enlarged thymic dullness to the left of the sternum, which was corroborated by the X-ray negative in each case. Most of his cases receive treatments of short duration over the chest and back at the site of the thymus gland two or three times a week for six weeks to two months. If there was recurrence of untoward symptoms, the cases were returned for one or two exposures with good results. "Upon considering the tendency to recurrence after X-ray treatment in each case, and noting the experiments of Rudberg showing rapid regeneration following irradiation, it would seem that the X-ray exposures were given too conservatively in these cases. The vague fears of the mother as to the possible harmful effects of the ray, which fears are not frequently shared by the physician, often cause the X-ray operator to err on the side of conservatism, to treat too lightly and discontinue the treatment too soon."

A FAMILY AFFAIR.

When a Toronto man engaged a physician to attend his wife in her approaching confinement, he was requested to send in for examination the usual sample of urine. A few evenings later he reappeared with a quart beer bottle full.

"I only wanted a small bottle, about two or three ounces," said the physician on beholding the large bottle.

"Well, I thought I would bring you enough. Can you examine it now?"

"Yes."

A little later: "Is it all right?"

"Yes."

"No Bright's disease?"

"No. It's all right."

"Could I use your telephone to phone my wife?"

"Yes."

"Hullo! Is that you, Rebecca?"

"____"

"You're all right."

"____"

"I'm all right, too. Ikey's all right. Jakey's all right. Rachel's all right."

The physician sighed as the mystery of the full bottle was laid bare.—*Journal A. M. A.*

THERAPEUTIC BRIEFS.

Chronic Nasal Catarrh.—

Camphoræ .....gr. x
Oleoresinæ cubebæ.....*m* xx
Ol. amygdalæ express.....ad ʒss

Ft. solutio. Sig.: Use with atomizer several times a day.

Gastralgia, Hysteric.—

Zinci valeratis.....gr. xx
Quininæ valeratis.....gr. xxx
Ferri arsenatis.....gr. ij

M. Div. in Pil. No. xviii.

Sig.: One after each meal.

Anorexia.—

Fl. ext. condurango.....ʒiv
Strychninæ sulphatis.....gr. ⅛
Acidi hydrochlorici dil.....ʒij
Elixir gentianæ.....ad ʒvj

M. Sig.: Tablespoonful before meals in water through a tube.

Lichen Marginatus.—

Acidi salicylici.....gr. x
Icthyolis .....*m* xxx
Ol. lavandulæ.....gtt. v
Lanum .....ʒv
Petrolati .....ʒiij

M. Sig.: Apply night and morning.

Chronic Gastrosuccorrhea.—

Argenti nitratis.....0.15 to 0.25 gram.
Ext. belladonnæ fol....0.15 to 0.25 gram.
Aquæ dest.....150 grams.

M. Sig.: Two teaspoonfuls in water before each meal.

Mouth Wash.—

Quintin gives in the *Journal de medicine de Paris* this formula:

Sol. of formaldehyde (40%).....*m* xxx
Tincture of quinine (codex).....ʒij
Glycerine .....ʒij
Essential oil of mint.....*m* xxx
Essential oil of star anise.....*m* xxv
Essential oil of cloves.....*m* xv
Essential oil of cinnamon.....*m* xv
Alcohol (80%).....ʒiij

M. et ft. lotio. Sig: Twenty drops in a glassful of water.

Snuff for Coryza.—

The following, according to a writer in *Quinzaine Therapeutique*, is a useful snuff for coryza:

Antipyrin 1.00
Powdered boric acid.....2.00
Salicylic acid.....0.25
Talc powder 5.0

Septic Gingivitis.—

The following mouth wash has been found excellent in chronic septic gingivitis:

Acidi salicylici.....gr. xvj
Acidi benzoici.....gr. xvj
Tinct. krameriæ.....fl. ʒjss
Alcoholis absoluti .....fl. ʒj

A teaspoonful to a small wineglassful of water, as a mouth wash.

Endocarditis.—

The following is a useful combination in cases of rheumatic endocarditis, either threatening or established:

Salicini .....ʒj
Potassii carbonatis .....ʒiv
Sodii carbonatis .....ʒj
Aquæ .....ad ʒxij

M. Sig.: Two tablespoonfuls every two hours.

Laryngitis, Acute Catarrhal.—

For children, several doses of the following should be given a couple of hours apart, until the bowels are freely moved:

Hydrargyri chloridi mitis.....gr. ⅛
Pulvis ipecacuanhæ.....gr. ⅛
Sacch. lactis.....gr. ij

M. Sig.: One dose.

To be followed by:

Potassi citrat.....ʒiv
Tinct aconiti .....*m* xv
Tinct. opii camphorat.....fl.ʒij to iv
Syr. scillæ.....fl.ʒij
Syr. tolutani.....q.s. ad fl.ʒiij

M. Sig.: One teaspoonful every two hours.

BOOK REVIEWS.

GOULD AND PYLE'S CYCLOPEDIA OF PRACTICAL MEDICINE AND SURGERY. With Special Reference to Diagnosis and Treatment. Second Edition, Revised and Enlarged. In two volumes. By R. J. E. Scott, M. A., B. C. L., M. D., New York. With 653 illustrations. Philadelphia: P. Blakiston's Son & Company, 1912. Price, $10.00.

The second edition of this excellent work maintains the high standard set by the first. It is, as we have previously said of it, more than a dictionary of medical words; it is a cyclopedia of medical subjects. It does not pretend, of course, to tell all there is to be told about any of the subjects to which it refers. That is not the function of a cyclopedia. But it compasses, as its name implies, the circle of our knowledge on these subjects, and epitomizes and suggests and gives reference to the extensions of these subjects. The list of contributors, which is altogether too long to reproduce here, gives ample guarantee of the trustworthiness of the information contained in the book, and of the adequate mode of treatment. It represents about as good a ten dollars' worth as we ever remember to have seen.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I. No. III. Octavo of 174 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, $8.00; cloth, $12.00.

A perusal of the second of this series confirms the opinion which we expressed at the appearance of the first volume, namely, that the series represents a departure which must appeal at once to the medical man because of its extremely practical, clinical character, and because, being verbatim reports of actual clinics, they retain all the individual charm and power of the distinguished author. There is, we think, no question in anyone's mind that Dr. Murphy is one of the most able, as well as fascinating, clinicians in the country; and even if there were nothing new in these clinic reports, yet they would be of inestimable value in that they "make the dead bones live." But the truth is that Dr. Murphy not only vivifies all that he touches, but contributes valuable additions to actual knowledge and technique. So these reports are doubly valuable.

THE TREATMENT OF FRACTURES: With Notes Upon a Few Common Dislocations.—By Chas. L. Scudder, M. D., Surgeon to the Massachusetts General Hospital. Seventh Edition, Revised and Enlarged. Octavo volume of 708 pages, with 990 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Polished buckram, $6.00 net; half morocco, $7.50 net.

Here, at least, is a branch of surgery in which the general practitioner is obliged to be his own specialist. To be sure, the treatment of fractures and dislocations is usually classed with "general surgery;" but the fact is that the residuary sphere of general surgery is every year becoming smaller and smaller. Certain it is that the wonderful advances made in the last few years in roentgenology and surgical mechanics have raised this particular branch of surgery into the realm of a specialty; and yet, as stated, it is a specialty in which every general practitioner is obliged to be proficient and up to date. Dr. Scudder's text book, which for many years has enjoyed the reputation of being a standard work, recognizes this condition of affairs, and measures up to the occasion. The seventh edition takes ample cognizance of the exacting requirements of the day in the treatment of fractures. In fact, like the subject of which it treats, the book

has developed from a work on general surgery into an exponent of a specialty for the use of the practitioner.

INFANT FEEDING.—By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $3.00 net.

Of making books on Infant Feeding there is no end—and we are fain to add that reading of them often becomes a weariness to the flesh. However, it is a large subject, and one that we have always with us, and so no doubt every fresh contribution to it is welcome, and it will go hard but that we can find in each new book some little addition to our knowledge, some helpful suggestion to the solution of the ever-vexing problems of infant feeding. We notice that Dr. Grulee, in his preface, expresses his obligation to his wife for friendly criticism. That, we think, is a good idea. If writers of these books on the care of children would make a practice of taking counsel with their wives—or with other men's wives if they have none—we are of the opinion that a great deal of formal nonsense would be omitted and a great deal of real live practical sense would be attained which too often, alas, are conspicuous by their respective presence and absence.

THE IMMEDIATE CARE OF THE INJURED.—By Albert S. Morrow, M. D., Adjunct Professor of Surgery in the New York Polyclinic. Second Edition, Revised. Octavo of 354 pages, with 242 illustrations. Philadelphia and London: W. B. Saunders Company, 1912 Cloth, $2.50 net.

Emergency surgery and immediate care of the injured does not receive the same attention in the medical schools of this country that it receives in Europe—chiefly because the relations between the schools and the public hospitals are not so well established here as there. In the great majority of our colleges, unless the graduate student serves an interneship in a public hospital, he learns next to nothing of the practical care of emergency and injury cases. To the practicing physician, on the contrary, this is a very real and immanent part of his routine, and the promptness and skill with which he responds to emergency calls will go a long way toward determining his reputation and therefore his practice in the locality where he lives. For this, if for no other reason, it is a subject well worth his careful study, and he will find that Dr. Morrow covers it very thoroughly and helpfully. We commend it to the practicing physician, no less than to the student, especially to the beginner in medical practice, and still more especially to the young physician and surgeon whose practice is laid in districts where accident and injury cases are, in the nature of things, likely to form a considerable part of his work.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY.—By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M. D., Assistant Professor of Clinical Medicine, University and Bellevue Medical College. Third Revised Edition. Octavo of 639 pages. 339 illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $5.00 net; half morocco, $6.50 net.

The very existence of a text book of more than six hundred pages, not one of which contains superfluous matter, upon diseases of the genito-urinary tract is significant of the tremendous importance of the subject and immense amount of special work that has been done therein during the past decade. Fifteen or twenty years ago one could not have found enough to say about it to fill a book half the size; today the authors of this work, who are not by any means verbose, find it difficult to crowd all they have to say

into the space at their command. We are not ourselves experts in genito-urinary matters, but we should say that this comprehensive book represents about the last word on the subject. It is hard to see how anything could be added to it or left out of it. Every phase and angle of the matter is adequately presented, with a masterly hand, and yet with a plainness and practicality which make it available to the general practitioner.

DIFFERENTIAL DIAGNOSIS. Presented through an Analysis of 385 Cases.—By Richard C. Cabot, M. D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition. Octavo of 764 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, $5.50 net.

Dr. Cabot's reputation as a diagnostician is too well established throughout the length and breadth of the land to need any tooting from our modest trumpet. By the same token, the merit of this presentation of the subject from his pen may, and doubtless will, be taken for granted wherever his name is known. The feature of the work which especially impresses us is that it has achieved the rare accomplishment of reducing the empirical aspect of diagnosis to a scientific basis. The underlying principles of diagnosis are, of course, the principles of the various sciences to which they pertain—of physics, acoustics, chemistry, physiology, and what not. But diagnosis itself is, after all, and must ever be, an empirical affair. This Dr. Cabot recognizes, and he himself has contributed as extensively as any one man to its empirical data. But even in his empiricism he is a scientist, and has here, in this excellent book, classified his data according to the statistical and experimental method, so as to serve as trustworthy guiding rules for clinical practice. It is an unique and diagrammatic summary of the "case" side of diagnosis.

AN EPITOME OF THE TREATMENT OF NERVOUS DISEASES.—By Henry Irving Berger, M. D. St. Louis: Peacock Chemical Company.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE LIVER.—By Henry Irving Berger, M. D. St. Louis: Peacock Chemical Company.

DIAGNOSIS OF CARDIO-VASCULAR DISEASES.—By Henry Irving Berger, M. D. St. Louis: Peacock Chemical Company.

These three little books do not, of course, pretend to be original in their subject matter, but are very well-digested epitomes of the latest status of diagnosis and treatment in the diseases whereof they treat. Each contains carefully arranged tables of differential diagnosis, enhanced by diagrammatic illustrations of the physical conditions and findings. Indeed, so far as we can see, they contain everything that is essential to the clinical recognition and management of the diseases in question. Mention should also be made of their excellent press-work and binding. The Peacock Chemical Company incurs a debt of gratitude from the profession for putting them in the physician's hands—especially in view of the fact that one may get free, gratis, for nothing, by merely writing the Peacock people and asking for them.

TINEA FAVOSA.

Acidi salicyli Acidi chrysophanici	} aa	....5ij
Cretæ preparatæ		....5ij
Petrolati		....ad ℥iij

M. Sig.: Remove the crusts and rub the ointment in for fifteen minutes at night.

FOILED.

The last time I was in New York I entertained at dinner at a swell cafe a country cousin from Leavenworth. When we got outside, he said to me: "Do you know you accidentally dropped 80 cents on the table just as you left? That thief of a waiter tried to grab it, but I beat him to it."—*Atchison Globe.*

NOTES AND MISCELLANY.

RECONTRUCTION FOLLOWING TYPHOID FEVER.

IN some instances, the convalescence of typhoid fever presents a debility closely akin to a tuberculous predisposition, which indicates the need for more potent reconstructives than the stomachics and tonics usually employed for this purpose. This need is well met by Cord. Ext. Morrhuæ Comp. (Hagee). Usually in these cases the blood stream is thin, the processes of metabolism are interfered with and the vital powers remain far below par. The tissues are easily susceptible to graver infections, such as tuberculosis. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will prove its worth as an up-builder in this class of cases, charging the blood current with nutritious elements and finally overcoming the debilitated state. Its palatability gives it added utility, a feature worthy of consideration in choosing remedial agents of this character.

THE CHLOROSIS OF YOUNG GIRLS.

To permit the blood stream of chlorotic girls to remain in an impoverished state, is to expose them to more than one peril. Such patients are usually high-school or seminary girls, struggling with duties that tax their every ounce of force. When the break comes, as it almost inevitably will, the physician has on his hands a girl whose recovery takes much time and care. In most instances this could be avoided were the girl put on Cordial of the Extract of Cod-Liver Oil Compound (Hagee).

As a blood-maker and general tissue builder, it is of much value in chlorosis. Not only are the blood corpuscular elements increased in number, but also a noticeable improvement takes place in their quality. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will prove its merit in these cases and its systematic administration over a considerable period of time will save chlorotic girls much of the distress to which they otherwise would be subjected.

THE ICE BAG IN APPENDICITIS.

In a most interesting article by A. M. Fauntleroy, a surgeon of the United States Navy, *Medical Record,* August 3, 1912, the fact is brought out, basing the same upon a large number of cases of appendicitis operated, that the ice bag is positively harmful in this condition. In 50% of the cases operated, where the ice bag was used, the condition seemed to indicate that there was a noticeable lack of effort on the part of nature to wall off, from the rest of the abdominal cavity, the appendix, which was frequently very much congested, gangrenous or perforated. He also observed that in the ice-bag cases there was a surprisingly low white-cell count when one took into consideration the condition found in the abdomen at the time of the operation. From 8,000 to 11,000 white cells was the rule in these ice-bag cases when one would be justified in saying that the pathological condition warranted a constitutional reaction of from 20,000 to 30,000 leucocytes, or even higher.

On the other hand, in those cases in which the hot-water bag or morphine had been used prior to operation (the ice bag not being used at all), the white count corresponded to what one would expect. Dr. Fauntleroy advances from his findings the logic that while the ice bag causes numbness, practically the same as in the condition of frost-bitten ear or toe, it also decreases hyperemia, leucocytosis and stasis in the part to which it is applied. That heat is the direct antithesis of cold in encouraging favorable physiological action in inflam-

matory processes, whether superficial or peritoneal, seems to be from his report most logically and conclusively proven.

In applying heat, whether it be for peritoneal or inflammatory conditions of a more superficial character, the most rational method is to use that which is not only sanitary, but, for the comfort of the patient does not require frequent changes. In this respect, antiphlogistine, on account of its heat retentive properties, its cleanliness, and its ease of application, should appeal to the professional mind. That antiphlogistine has proven of great therapeutic value as a thermic agent is best indicated by its extensive professional employment and its many advantages over the hot-water bottle and other methods of application of heat is readily discernible.

CONVALESCENCE FROM THE EXANTHEMATA.

The first two or three months of the year are usually characterized, in the experience of the family physician, by the occurrence in his practice of a crop of cases of the contagious diseases of children, especially scarlet fever, measles, German measles, etc. This is accounted for by the readiness with which contagion is spread in the schools, when ventilation of the school room is the least perfect and the closer housing of school children during school hours favors the distribution of communicable diseases. As the diseases in question are self-limited in nature, expectant and systematic treatment, together with precautions as to isolation, etc., is about all the physician is called upon to direct. It is well known, however, that in all but the mildest cases, the adolescent subject of scarlatina, or measles, is usually more or less debilitated or devitalized, when convalescence is established. Special care should be taken to avoid the administration of any tonic or reconstituent which is likely to disturb the child's digestion or, by inducing constipation, to minimize the appetite or desire for food.

Pepto-Mangan (Gude) is the ideal reconstructive tonic for these young patients, because it is pleasant to the taste, easily tolerable by the stomach and readily assimilable by blood and tissue and promptly efficient in restoring appetite, strength, color and general well-being.

FREE IODINE IN SYPHILIS.

The treatment of syphilis has long been dependent upon mercury and potassium iodide. This last combination of iodine with an alkaline element, potassium, is unnecessary and often harmful. Through Soluble Iodine (Burnham's) it is possible to administer free iodine in a readily soluble form, which permits its entire appropriation by the system without the effects of any needless or harmless element.

Iodine thus employed exhibits its full physiological action without the slightest systemic disturbance, causes no deleterious change or profound and dangerous reaction in the general condition of the patient, and what is of greater importance in scientific therapy, allows gradual increase or variation of its dosage to meet the exact needs of each individual patient.

It is a noteworthy fact that there are no local or general undesirable effects from the use of Soluble Iodine (Burnham's) in appropriate doses, such as almost always sooner or later become manifest from the administration of potassium iodide in even partially effective amounts.

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Paraldehyde is hypnotic and anodyne. It calms restlessness and insomnia, and procures unbroken sleep from four to seven hours' duration, and to leave behind neither languor, nausea nor digestive disorders. It also acts as a diuretic. It has been found efficient in the insom-

nia of various acute diseases, and also in acute mania. It is proposed as possessing the good without the evil qualities of chloral. (Nat. Dis., 3d Edit., p. 151.) Robinson-Pettet Co., incorporated. (See page 9, this issue.)

❖ ❖ ❖

THE POWER TO RECUPERATE.

Resident in the tissues, may be markedly augmented by Cord. Ext. Ol. Morrhuæ Compound (Hagee), and with many physicians it is a routine practice to employ it for this purpose.

The usefulness of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) as a reconstructive lies in the nutritious elements contained, which when fed to impaired tissues build up and strengthen them. Each fluid ounce of the Cordial represents the extract obtainable from one-third fluid ounce of cod liver oil (the fatty portion being eliminated), 6 grains calcium hypophosphite, 3 grains sodium hypophosphite with glycerin and aromatics. It is free from grease and the taste of fish.

❖ ❖ ❖

FOR A STIMULANT.

There are many occasions in medical practice when whisky is a desideratum. But physicians generally have trouble in getting good whisky. Old Tom Jones Whisky, sold by Simon N. Jones & Co., Louisville, Ky., has been on the market for many years, is of absolute purity and of the best quality and is sold at a reasonable price. It is advertised in this issue of the MEDICAL BRIEF, and physicians can use this article with perfect assurance of its excellence.

❖ ❖ ❖

TREATMENT OF CHRONIC METRITIS.

P. Mocquot and J. Mock, in *Revue de chirurgie* advocate a procedure originally tried out by Delbet, consisting of the intrauterine injection of a 30% or 40% solution of zinc chloride. After cleansing and drying the vagina, and ascertaining the permeability and position of the uterus with a sound, a fine cannula having minute lateral openings near its extremity is introduced to the uterine fundus and a quantity not exceeding two or three c.c. of a 5% solution of cocaine or novocain injected while the cannula is gradually withdrawn. Five minutes later, after a tampon has been placed beneath the cervix to protect the vagina, the cannula is reintroduced and an injection of zinc chloride solution, not exceeding one to two c.c., is given. The cannula is rotated as it is withdrawn in order to spread the solution evenly over the mucous membrane. The vagina is then irrigated, but not tamponed.

After the first injection the patient should remain in bed a day; later, recumbency for four or five hours is sufficient. The procedure is not repeated until the eschar formed has been completely discharged, *i. e.*, as a rule, in a week. The average number of injections required is three or four. Slight pains follow the injection in one out of four or five cases, and more severe pain, for which hot compresses may be applied to the abdomen or enemas containing tincture of opium given, once in about twenty-five cases—generally in women having annexal lesions.

Comparison of the results obtained by this method in 120 cases with Busse's statistics of cases treated by curettage show a marked advantage both in the percentage and permanency of results for the zinc chloride procedure. The greatest efficacy of the latter is seen in hemorrhagic metritis and in metritis following abortion; in the latter form, cure is almost certain, sometimes after but a single injection. In senile metritis and that accompanying fibromas the results are also good, though less prompt. In glandular and parenchymatous metritis, the pain is wholly relieved and the uterus reduced quite or nearly to its normal size. Subsequent conception and labor are not interfered with.

THE COUNTRY SURGEON.

A correspondent of *The Lancet,* turning over an old book of verses that he had not read for many years, came across the following poem entitled "The Country Surgeon." The book is "The Poetical Scrap-Book," published at Edinburgh in 1824.

Luckless is he whom hard fates urge on
To practice as a country surgeon—
To drag a heavy, galling chain,
The slave of all for paltry gain—
To ride regardless of all weather,
Thro' frost, and snow, and hail together—
To smile and bow when sick and tired,
Considered as a servant hired.
At every quarter of the compass,
A surly patient makes a rumpus,
Because he is not seen the first,
(For each man thinks his case the worst)
And oft at two points diametric,
Called to a business obstetric.
There lies a man with broken limb,
A lady here with nervous whim,
Who at the acme of her fever,
Calls him a savage if he leave her.
For days and nights in some lone cottage,
Condemned to live on crusts and pottage,
To kick his heels, and spin his brains,
Waiting, forsooth, for labor's pains;
And that job over, happy he,
If he squeeze out a guinea fee.
Then, worn like culprit on the wheel,
He sits him down to hasty meal;
He sits! when lo! a patient comes,
With rotten tooth and putrid gums;
The doctor takes his dentist tools,
Fixes the screw, and tugs and pulls;
His dinner cold, his hands this mess in,
All for a shilling or a blessing.
Now comes the night—with toil opprest,
He seeks his bed in hope of rest:
Vain hope! His slumbers are no more,
Loud sounds the knocker at the door—
A farmer's wife, at ten miles distance,
Groaning, calls out for his assistance:
Fretting and fuming in the dark,
He in the tinder strikes a spark,
And, as he yawning heaves his breeches,
Envies his neighbor blest with riches.

BOILS AND CARBUNCLES.

Acidi carbolici	gt. xx
Glycerini	℥j
Aquæ dest.	℥ij

M. Make a crucial incision ⅛th to ¼th and inject toward the periphery in various directions, using a few drops. Paint collodion for extreme circle of inflammation, leaving opening ¼th inch. Dress with antiseptic cerate. One to three injections cures without further pain within three to five days.

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THE ENSIGN REMEDIES

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Morphine Habit

Treatment is not a stimulant, but a food, and repairs nerve tissue as the stimulant is withdrawn. The drug is withdrawn gradually, without distress to the patient.

Ordinary cases are cured in two or three weeks, and one treatment is sufficient in recent cases.

DIRECTIONS—Vials A and B in alternation, one dose of six pellets every two hours; the period between doses to be lengthened to every four hours, and then to twice a day, as the cure progresses. The amount of morphine or opium used to be lessened each day, as the patient can without distress, but always less. Treatment to be stopped at once as soon as the habit is broken. Occasional doses can be used for a time, if there is any return of desire.

Treatment, in two 3-dram vials, $2.00 net. No sample or trial treatments.

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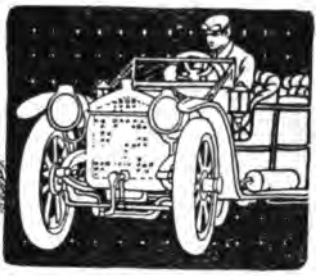
OPPORTUNITY.

"Opporchunity knocks at ivery man's dure wanst. On some men's dures it hammers till it breaks down the dure, an' thin it goes in an' wakes him up if he's asleep, an' aftherward it wurrks f'r him as a night watchman. On other men's dures it knocks an' runs away, and on th' dures of some men it knocks an' whin they come out it hits thim over th' head with an ax. But ivery one has an opporchunity."—*Mr. Dooley.*



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The Medical Brief

ST. LOUIS, MO.

A Monthly Journal of Practical Medicine

HENRY R. STRONG PUBLISHER T. G. ATKINSON, M. D., EDITOR

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EDITORIALS.

BABY SHOWS AND EUGENICS.

ST. LOUIS has just conducted a baby show on strictly modern, scientific principles. Most of the mothers, blissfully ignorant of modern scientific methods, and mindful of old-time baby shows, brought their children to the exhibition bedecked in all the glory of dimity and ribbons wherewith the mother heart delights to set off infant beauty; but they were gently and firmly informed that upon this occasion none of these dazzling externals would be permitted to sway the verdict of the judges. Science, not art, was the arbiter here; this was not an exhibition of fine raiment, but a competition of babies. And so the disconcerted mothers were sternly ordered to disrobe their little darlings down to the "bare;" and the judges proceeded to carry out a cold-blooded, physical inspection and estimation of their various "points" (the youngsters' we mean, of course, not the mothers'), precisely as if they were so many head of prize stock. They measured their various girths and dimensions; they made them trot up and down, to observe their "action," they looked into their mouths and examined their teeth; they looked them over for defects of the skin; they felt their bones and muscles, and put them through all the paces that are familiar to men who deal in live stock of any kind.

So far, so good. It was a startling innovation, perhaps, but in the main a sensible one. The human infant is, after all, a young animal, and in a competition of baby excellencies, it is right and proper that these sheerly physical qualities should be stripped of their esthetic covering and subjected to the matter-of-fact tests of the tape measure and other agencies of precision. Only thus could justice be done to the competing candidates, and the purpose of the exhibition—namely, the stimulation of an ambition to beget and rear physically sound and normal offspring—be adequately fulfilled. And the estimation of these physical qualities has, at least, this satisfactory feature—that it rests upon fairly definite, well-established and readily-ascertained data, yielding fairly uniform and trustworthy results under the modern tests in such cases made and provided.

But even a baby show conducted upon strictly modern, scientific principles, and in the interests of that fearful and wonderful propaganda known as eugenics, recognizes that there is more to be considered in the make-up of a good human specimen than soundness of wind and limb and justness of physical proportion. Hence the application of so-called "intelligence tests" in addition to the physical tests already mentioned. And here is where the trouble begins. You may lead a horse—after you have ascertained and catalogued his points—to water, but you can not make him drink. And you may walk a child, after a similar process, up to the intelligence tests; but if there is any method by which the average human, infant or adult, but especially infant, can be induced to give a display, to order,

of the real intelligence that is in him, we have yet to learn of it. Even among the higher types of brute creation such a thing is almost impracticable—so that one would, by all the so-called "intelligence tests," inevitably mark the terrier higher that the retriever. In the human, the uncertain, capricious element is altogether too large to make even an approach to accurate discrimination possible.

A single incident which actually occurred in this competition will illustrate our point better than all the arguments we could make upon it. One of the "intelligence tests" applied was the asking of simple questions of children able to talk, and grading the answers. One little chap three years old steadfastly refused to vouchsafe any answers at all, and the judges had about made up their minds to grade him zero on this particular test, when he suddenly turned to his mother and said, in a bored sort of voice, "Mamma, you tell them all that,—I'm tired." Whereupon everybody shouted with laughter and marked him high. Suppose that the youngster had chosen to withhold his remark until after the examination had been completed, how just an idea would have been elicited of his real intelligence?

Good nature counted in the points. "A child that waved goodbye on being carried away," we learn, "was marked higher than one who went away without waving or speaking." But what person of sense, who has ever had experience of little children, puts any stock in such a test as an indication of genuine good nature, or of the real brightness, of a child? As a matter of fact, it might just as often indicate vanity, and so be made to count against him. Everybody who knows anything about children, and especially anyone who has had children, knows that their most genuine and notable exhibitions of intelligence are given in the natural course of their play, and when nobody is spurring them—usually when they do not know that any grown-up is even watching them. The greater the degree of real, deep intelligence, as a rule, the less display they make of it, and the more promptly they "close up" when strangers begin to put them through their paces. So that, at best, whatever results might be elicited from this kind of testing would, in the main, represent only the superficial, surface qualities of mind and temperament, not the genuine article; the child's precocities, not its intelligence.

Let the shoemaker stick to his last. Medical men are excellent judges of the baby's physical qualities; and it is an excellent thing to stimulate the physical improvement of the race. But we have not much regard for the physician—or for any other scientist—as a judge of infant intelligence or character; and while we believe it to be a splendid idea to teach, upon general principles, the development of intelligence and good character traits in our children, still we are of the opinion that when we attempt to discriminate these qualities of mind and spirit by means of set tests, we arrive at no useful results and only make ourselves ridiculous.

THE PHILOSOPHY OF A SCIENTIST.

IN OUR department of *The Doctor Himself,* this month, we publish in full an article, under this title, from the pen of Dr. Victor C. Vaughan, of Ann Arbor, Michigan, which we invite all of our readers to peruse in their leisure time; and if they have no leisure time, then we urge them to take an hour off specially to read it. We print this preachment of Dr. Vaughan's at length, not because we approve or agree with it, but because it sets forth in pretty complete and lucid fashion what may be fairly regarded as the representative attitude of a certain school of thought toward the problems of life, in which we fear must be included many members of the medical profession. We regret to see so able and influential

a leader of thought as Dr. Vaughan occupying and proclaiming this kind of position, and are still more sorry to find it awakening so general a response in the minds of medical men.

The first and most obvious objection to Dr. Vaughan's "philosophy" is that it is not a philosophy of life at all, but simply a complacent pragmatism, which confesses its inability to solve any problems and takes refuge in ringing the changes upon the ancient Spanish maxim that "whatever is is right," mixed with a little professional vanity such as any class of workers might with equal justice share with the medical scientist. "No philosophy," says Dr. Vaughan, "evolved from the inner consciousness of man has ever done mankind half the good that has been secured to him by the discovery of the agents of infection." The electrician might properly say the very same thing of the invention of the telegraph and telephone; the engineer of the construction of the locomotive and the steamboat; the business man, even, of the wonderful advances in progressive trade methods. But the recognition of these very obvious benefits does not in any sense constitute a philosophy of life—not even the most elementary or so-called practical philosophy. Neither the achievements themselves, nor a contemplation of them, furnish to any individual, or to any body of men, the slightest guiding principle in his or their relations to that great phenomenon-complex which makes up what we call life.

But a still more serious criticism of Dr. Vaughan's "philosophy" is that it fails to recognize the very informing essence of its own significance, namely, that all the achievements which he so justly eulogizes *have* been evolved from that inner consciousness of man which he professes to despise, and depend upon still further evolvements from the same inner consciousness for whatever extension they hope for in the future. Without philosophy—the true philosophy of the inner consciousness, for which Dr. Vaughan displays such contempt—the whole process of civilization and progress lacks motive and incentive, to say nothing of judgment and direction. There is nothing in science, *per se,* either to stimulate or to order the very achievements of which Dr. Vaughan and all the rest of us are so proud. Science, of herself, originates nothing, creates nothing, is responsible for nothing. And no one is more careful than the great, true scientist, to accord to no process or achievement any greater significance than he knows it to possess. The larger science makes the circle of knowledge, the larger and loftier becomes the outer circumference of mystery that surrounds us; and it is this outer circumference that furnishes the motive of progress. Science, in short, is not the vanguard, but the rearguard of human progress—not its motive, but its working method—and if philosophy and religion were to suddenly withdraw from the process, the mission of science would be hopelessly annulled, and her half-finished work become a chaotic and useless confusion.

We repeat, not science herself, nor any of the achievements of science, ever furnished a man or a nation with the crudest philosophy of life, that is to say, a guiding principle for the adjustment and regulation of conduct. Science has merely carried out the working details of such principles, after they have been evolved and approved by the inner consciousness. See how Dr. Vaughan unwittingly concedes this in his own confession of faith. "The foundation-stone of my philosophy," he says, "is the doctrine of evolution." Yet he boasts, in the next breath, of the discoveries and inventions of science which have contributed most toward combating the savage laws of natural selection and the survival of the fittest. Pray what place has the abatement of disease, the lessening of pain, the decrease of the burden of poverty, or the ennoblement of the lives of others in

the doctrine of evolution? Strike from the equation all that has been evolved from the inner consciousness of man, and leave only the doctrine of evolution, as science has enunciated it, and there will be no problem at all; at least none requiring a philosophy of life for its solution. Not that there is any real discrepancy between the broad doctrine of evolution and true philosophy; but the materialistic evolutionist has prated so long of the influence of environment upon the organism that he has totally forgotten the equally important obverse of the doctrine—the influence of the organism upon environment. It is this phase of the evolutionary process that has produced all those startling reversals of natural law in which Dr. Vaughan takes such a just pride. And this phase is precisely the thing which he professes to despise and goes out of his way to belittle—the inner consciousness of man.

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OPERATION.

You are carried in a basket
Like a carcass from the shambles,
To the theatre, a cockpit
Where they stretch you on a table.

Then they bid you close your eyelids,
And they mask you with a napkin,
And the anesthetic reaches
Hot and subtle through your being.

And you gasp and reel and shudder,
In a rushing, swaying rapture,
While the voices at your elbow
Fade, receding, fainter—farther.

Lights about you shower and tumble,
And your blood seems crystallizing—
Edged and vibrant—yet within you
Racked and hurried, back and forward.

Then the lights grow fast and furious,
And you hear a noise of waters,
And you wrestle, blind and dizzy,
In an agony of effort,

Till a sudden lull accepts you,
And you sound an utter darkness . . .
And awaken . . . with a struggle . . .
On a hushed, attentive audience.

W. E. Henly.

Observations on Syphilis.*

By Sir Henry Morris, Bart., M. B., Lond., F. R. S. C. Eng.
President of the Royal Society of Medicine; Consulting Surgeon to the Middlesex Hospital, Etc.

THE Royal Society of Medicine, of London, England, has been conducting a most exhaustive symposium on the subject of syphilis, in all of its aspects, historical, pathological, biological, therapeutical, etc. The closing remarks, made by Sir Henry Morris, represents a summary of the debate, and furnishes a concise epitome of the present status of our knowledge of syphilis and its treatment. It is the most complete and comprehensive summary of the subject which we have yet seen, and we publish it for the benefit of our readers in the confident conviction that they will find in it the last word, up-to-date, from every point of view. Next month, in a continuation of the same article, the Wassermann reaction will be thoroughly analyzed and discussed.

Gentlemen: In bringing to a close the important debate which has now extended over four sittings, I propose first to contribute some remarks on the history of syphilis; next to comment on some of the points raised in connection with the Wassermann reaction and parasyphilis; and finally to make a few observations on the treatment of the disease:

History: Prevalence and Intensity in the Past.

The greater part of what I have to say refers to the question of the prevalence and intensity of syphilis in the past, because in the first place I find in it much which interests me, but chiefly because less attention has been given to this than to either of the other two aspects of the subject which were set down for discussion.

Whether syphilis did or did not exist in prehistoric and early historic times still remains an unsettled question. Probably it will always so remain. Intelligible as is a belief that the disease prevailed in Europe in pre-Christian and early Christian centuries, it rests upon very meager evidence, supported by inferences from facts rather than by facts themselves. Nor has this debate so far added any evidence of a more convincing kind. It is said that about 2500 B. C. a Chinese writer, Nusi King, described the phenomena of venereal disease, and among them the symptoms of lues venerea. But what was the lues? Gonorrhea, chancroid, lepra, or lupus, might, perhaps, equally have been referred to under a term meaning "a spreading calamity," "a pest," or "a contagious disease." No reference is made to the venereal disease in the Babylonian Code known as the Laws of Hammurabi—the oldest known laws in the world—which date from 2100 B. C., or 500 years before the Laws of Moses. Yet, had syphillis been a scourge in those days, it would probably have come under some legal control, because the Babylonian legislation took account of several medical and surgical affections, and its medico-legal judicature was very severe on surgeons guilty of malpraxis, or who even were merely unsuccessful in the performance of operations.

Dr. Albert S. Ashmead, of New York, in discussing the Question of a Relationship between "Syphilitic" Llamas of the Department of Puno, Peru, and Pre-Columbian Syphilis in Man, says, "The Japanese race has been saturated with syphilis for 1300 years; the Chinese race

*Being the closing remarks at the fourth and concluding debate on syphilis at the Royal Society of Medicine on July 8, 1912.

since 1124 B. C."; and he supposes that these races, by "their long generational experience with the disease, have acquired a great measure of resistance to the germ." The descriptions given of venereal diseases in the centuries between remote antiquity and medieval times, by Greek, Latin, Arabian and other authors, concern non-specific ulcers, buboes, and the brenning or burning, by which was meant gonorrhea; and the inferences drawn from them as to the existence of syphilis are attributable to the confusion arising from grouping all affections which spring from commerce between the sexes under the general term, "venereal disease."

Dr. Norman Moore, adopting the conclusions of the three learned men whom he quotes—namely, Jean Astruc, professor of Montpelier; Dr. John Freind, and van Swieten, is of opinion that further researches into ancient writings, even by scholars possessing the greatest linguistic attainments in Greek, Latin and Oriental languages, are not likely to lead to the discovery of proof of the prevalence of syphilis in early times. He regards the existence of the disease in those times as not proven; and, indeed, negative evidence is all than can be expected or which is possible if there really was no such disease in antiquity. It might, then, be said of syphilis, as Mark Twain said of Shakespeare, whom he speaks of as being "just a tar baby": "We can go to the records and find out the life-history of every renowned race horse of modern times, but not of Shakespeare. There are many reasons why, and they have been furnished in cart-loads . . . but there is one which is worth all the rest of the reasons put together—he hadn't any history to tell." But we can look to other records besides those written in books, and eaten into the bones of men, as I will show presently.

Dr. Norman Moore considers the endeavor of Francisco Lopez de Villalobos in 1498 to identify syphilis with the condition described by Avicenna (980-1037) in the fourth book of his "Canon of Medicine," under the name of saphati, as altogether unconvincing, and, though he inclines to the belief that the period of the first appearance of syphilis in Europe was the end of the fifteenth century, yet he thinks much more evidence than is generally set forth is required before we can accept the statement that this disease was imported from America by Columbus.

Syphilis in Man and Animals Indigenous to South America.

It seems to me that further evidence has been brought forward within the last fifteen or sixteen years by Dr. Ashmead in support of the views (1) that syphilis prevailed in America as well as in Japan in very early times: and (2) that in America it was a disease of animals as well as of man. Dr. Ashmead quotes David Forbes, a great authority on everything connected with the native Indian population, to show that the very special and fundamental racial characters of the native Indians of Bolivia and Peru are in complete accord with the nature of the countries they inhabit, and have needed *ages* for their evolution. Hence, concludes Forbes, these people—the Aymara Indians—must have been established in these countries for a very long time. Of the three great tribes of South American Indians, the Ipcas were the chief, and were the conquerors, in the eleventh century, of the second greatest tribe—namely, the Aymaras of Bolivia and Peru. It is in the Aymara Indians that the indications of what may be called autochthonous syphilis are strongest; and, as Dr Ashmead remarks, the conclusion which may be drawn from these facts is, "that the probabilities of the existence of syphilis in this part of the world before Columbus are almost overwhelming."

Forbes never met with any instance of an Indian disfigured by the disease, their treatment of it being successful.

They employ mercury (metallic form) and calomel from native cinnabar. Chewing coca is said to prevent mercurial salivation. He thinks syphilis must have been known among these Indians from a very early period; (1) because they have in their language a name for this disease; (2) because they are quite familiar with its treatment; and (3) because skulls are occasionally taken out of the graves dating from the period antecedent to the Spanish conquest on which may be seen depressions or scars pronounced by several medical men to have resulted from syphilitic caries, and which in two instances which came under his (Forbes') observation afforded proof that the disease had been arrested in its progress and new bone formed during the lifetime of the individual.

The same writers tell us that the llamas of Peru, and the alpacas (animals peculiar and confined to the highlands of Bolivia and Peru) suffer extensively from a disease which is identical with syphilis in man and which is healed by the Indians by a precisely similar mode of cure, consisting principally of inunctions with mercurial ointment; and Forbes says:

> The mortality among the alpacas caused by the disease when not extremely carefully treated, is said to be very great indeed, and the bones of the diseased animals are stated to be very much affected by caries exactly as in man. The question whether this disease may have been communicated from the alpaca to man, or *vice versa*, is an open one. It is well known that such unnatural intercourse is common, and that under the Incas several laws were enacted against it. Even after the Spanish conquest an old law not permitting the llama drivers to start on their journeys unless accompanied by their wives was retained in force, and this regulation was understood to be intended as a safeguard against such abuses.

Commenting on two unsuccessful inoculations of llamas with human syphilis, Dr. Ashmead asks: "May it not be that if the disease (syphilis) in pre-Columbian American was originally an animal disease, there may be breeds of llamas whose disease we suspect it to have been, who have by this time acquired really a measure of resistance or immunity, just as special breeds (Chinese and Japanese) of human beings?" The llamas of the department of Puno, Peru, were called by the natives "syphilitic llamas," and Dr. Ashmead proposed that other experiments on the Incan and Aymaran Indians of Peru with the virus taken from one of the syphilitic llamas should be made, with the view of determining whether the disease supposed by the natives to be animal syphilis was in reality human syphilis or not. If these experiments have been made the results, so far as I can find, have not been published.

Dr. Ashmead says that human syphilis as it occurred in Japan in the seventh century was a veritable epidemic, as it was in Western Europe in the fifteenth century, and he continues: "Writers of these periods, in both geographical situations, claim that the disease was veritably epidemic then, and was quickly followed by a spread of leprosy. In Japan it is true, for I have translated several Japanese works on the subject, and know it to be a fact."

Inferences from the Pottery of the Incas.

Proof has been sought in the pottery of the Incas of the existence of syphilis in Bolivia and Peru in pre-Columbian and in even very remote times. It is admitted that the Inca pottery and the types of the representations of human features thereupon are of much earlier date than the Spanish conquest of these countries; but the cause of the deformities and disfigurements of the human faces portrayed on these ceramic vases is a question still in dispute. Were they the results of leprosy, of lupus, of syphilis, or of mummified changes after death? Virchow thought they were a strong argument of a pre-Columbian lepra, and he emphasized the fact that the similarity of the changes which lepra and lues brought about on the surface of the body was often very marked, and that in the Middle and later Ages mistakes

as to the identity of the two conditions occurred. He then made a special point of stating that he himself had never seen a syphilitic bone dating from the pre-Columbian era.

In 1895 Dr. Ashmead reopened the question by a letter to Virchow and since then has published several communications on the subject of the Inca pottery and pre-Columbian syphilis in America. He is of opinion that these ceramic representations are of syphilis, not of leprosy. One of his correspondents, Professor A. F. Bandelier, a resident of Lima, Peru, and, having a first-hand profound knowledge of the country and its inhabitants, wrote:

> Syphilis and related infirmities are common everywhere among the Indians as well as among other portions of the inhabitants. The disfigured faces on the pottery are generally regarded as representing that disease, and I never heard leprosy mentioned in connection with them. In addition to the kind of vases representing such phenomena, others are found of a still more obscene character, and one of them I sent to the Museum from Chan-Chan showing man in connection with the llama. . . . The idea of copying on ceramics the effects of syphilitic affections upon human faces is, without any doubt, pre-Columbian in Peru. . . . That even quite a number of vessels representing syphilitic dieseases should be post-Columbian is therefore only a proof of the fact that they are survivals of artistic ideas carried out long previous to the Columbian era, and that hence the disease existed in Peru untold centuries ago as well as it exists today.

Dr. Ashmead quotes also Mr. Teoberto Maler, who has been exploring sepulchers in various parts of Yucatan (a peninsula of Mexico between the Gulf of Mexico and the Carribean Sea) for many years, and who is the correspondent of the German Societies. This gentleman wrote in 1895 of syphilis:

> According to the ancient Spanish historians it seems, without any doubt, that syphilis is an original American disease, and the Spaniards found it for the first time among Indians of Hayti, Cuba, etc. It is also true that the ancient Peruvians imitated frequently in clay figures syphilitical accidents — for instance, human faces with the nose eaten away, etc. I saw at Paris, in the Ethnographical Museum of the Trocadéro many interesting specimens of Peruvian pottery of this kind. This naturally does not exclude that the same disease existed also in China or Eastern Asia in very remote times.

Of leprosy Mr Maler says:

> It only exists in the Spanish class and mixed people. I never saw or heard of a true Indian family affected with it. . . . The true Peruvian antiquities refer, as I believe, to syphilis and not to leprosy, but without doubt leprosy existed in very ancient times in most of the Asiatic lands.

Dr. Ashmead is of the same opinion, for he writes: "The representations which I have found on the Huacos pottery in the American Museum are, in my opinion, not leprosy, but syphilis;" but he seems to imply that both syphilis and leprosy were very ancient Asiatic diseases, and that they reached America from no other place but East Asia.

Professor Eugen Hollander, of Berlin, takes a different view of the representations on the Inca pottery. In a paper read at the Budapest Congress in 1910, after remarking that the Peruvian amphoræ are of a pre-Columbian epoch, he says that the deformities of the central portion of the human face represented upon them are held by different scholars and physicians with great divergence of opinion but with equal confidence, to be the result of destruction by lupus, by lepra, and by lues; so that there is much doubt as to the critical estimation of these objects. He himself attempts to show that the mutilations depicted do not represent disease, but are death portraitures of mummies, and in certain instances symbolical representations.

Of the various speciments of Inca pottery in view in the ethnographical department of the British Museum, and others, not exhibited, which were kindly shown to me by Sir Hercules Read and Mr. Athol Joyce in their workrooms at the museum, one only appears to be in any manner a portraiture of a syphilitic face. In looking at these specimens, as well as the much larger collection in the Trocadéro Museum, Paris, one has to bear in mind that cutting away the nose and upper lip was a form of punishment among the natives, so that the character of the remaining edges, as well as the

loss of these features, should be taken into account in judging whether the deformities represented are due to disease or injury.

If syphilis was known in America and was also prevalent in Japan and Eastern Asia in early times, it is a question whether the disease was transmitted from Asia to America or from America to Asia. But if the natives of South and Central America had no communication with the outside world previous to the arrival of Columbus, as the writings of Henry C. Mercer, Teoberto Maler and D. G. Brinton afford good ground for saying was the case, syphilis in America must have had an independent and distinctly separate origin ages before it was imported into Europe.

A Summary of Dr. Ashmead's Evidence.

If we pass in review the evidence put forward in Dr. Ashmead's communications in favor of the existence of syphilis, in early times, in America and the eastern parts of Asia, we find it embraces: 1. The traditional belief that many of the figures on the early specimens of Inca pottery were representations of the destructive processes of syphilis. 2. The statements of scientific investigators who are familiar with the countries and language of the native Indians that syphilis certainly existed and flourished in America in pre-Columbian times. 3. That there is no positive trace of pre-Columbian leprosy in America. 4. The traditional belief that the llamas and alpacas suffered extensively from a disease identical with syphilis in man. 5. That the Indians cured this disease, both in animals and man, by a treatment consisting principally of inunctions of mercury. 6. The accounts in Japanese books of syphilis in Japan in the seventh century, which books Dr. Ashmead has himself translated. 7. The failure of Dr. Ashmead to inoculate with human syphilitic virus either prostitutes in Japan or llamas in Peru. Dr. Ashmead had in his clinic in Tokyo, Japan, charge of 2000 licensed prostitutes; he tried, but invariably failed to inoculate with syphilitic virus harlots who had had syphilis. This showed, he thinks, that a syphilitic could not have a chancre twice. In this way he was able to determine the exact nature of a suspicious sore. Chancroids would repeat themselves; chancres never did.

A letter from Dr. Francisco Grana, of Lima, Peru, to Dr. Ashmead tells of a treatise just completed on syphilis during the Inca period, based on bibliographical and *numerous anatomical specimens.* The specimens included several skulls which display exostoses, believed to be of a syphilitic character; they were taken from tombs (Huacos), together with pottery, textiles and other objects. These skulls (as well as the human skulls and the bones of alpacas referred to by Forbes) contradict the conclusion to be drawn from the statement made by the anthropologist to the Smithsonian Institution in Washington, which is quoted by Dr. Norman Moore.

Is it not possible that the extreme rarity of bones of ancient skeletons showing changes indicative of syphilis is due to the free use of mercury in antiquity? The ancient use of mercury in a given country, however, by no means necessarily implies that syphilis was a disease of the inhabitants; because it was largely used, internally and externally, for internal complaints, for skin eruptions and diseases, and as a germicide for lice and other vermin. In China, Japan, South and Central America, and in India, this mineral was much employed as a remedy. Mercury is found in China. In India its wonderful powers caused it to be considered by the followers of a religious doctrine called Ruseshism as "one of the manifestations of God." The Romans and Arabs used it externally. The Hindus and the Chinese from very early times took it internally in medicine. The

Yogis of India drank twice a month a potion of sulphur and quicksilver, which they said gave them long life.

Is it not probable that as syphilis is known to be much milder in character in hot countries and the tropics than in more northerly and colder climates, tertiary syphilitic changes in bone rarely occurred in such countries? And if with a milder form of disease there are associated the prevalent use of mercury and the great measure of resistance which long generations of infection with the disease beget, have we not an explanation of some importance why these bony witnesses of ancient syphilis are wanting or very scarce, even in hot countries, where neither circumcision, depilation, regular use of baths, etc., after coition, or other conditions which prevent contagion were commonly in force?

Evidence from Contemporary Writers That Syphilis Was Imported in 1493.

The Columbian origin of syphilis in Europe would be disproved by showing either the non-existence of syphilis in the New World in pre-Columbian times or the existence of the disease in Europe prior to the return of Columbus in 1493. Having dealt with the former, I will now say a few words on the latter question. The principal evidence upon which is based the belief that syphilis was first introduced into Europe from Hayti in 1493 are the writings of three distinguished contemporary physicians, an Italian and two Spaniards. Dr. Norman Moore has quoted at length from the work of the Italian (Girolamo Fracastoro) Hieronymus Fracastorius, so that I will make no further reference to it. The two eminent Spanish physicians are Francisco Lopez de Villalobos and Diaz de Isla. They furnish strong proof of the importation of syphilis from Hayti by the fleet of Columbus. De Villalobos, whose habits of life exposed him to the risk of being himself an example of the disease, published his book, "Sumario della Medicini," in 1498. This work contains a supplement on syphilis (entitled "Un Tractado sobre les Pestiferas Bubas") which he calls "pestiferous bubas," and it is important to notice that it is quite separated from his account of "imposthumes," ulcers of the genitals, and gonorrhea, which is contained in the body of the work. The book is a poetical composition, for, like Avicenna (980-1037) before him, and Fracastorius (1530) later, de Villalobos adopted the plan of writing in verse. Only two copies of it are known to exist, one in the Royal Library of Madrid, the other in private hands. Its contents were made known by Dr. Bonifacio Montejo, of Madrid, in the latter half of the last century.

De Villalobos describes the primary, intermediate and secondary symptoms of syphilis; speaks of it as being a "new and contagious" disease, and mentions that the period when it first began to attract attention was in 1495, or a little earlier. The impression that de Villalobos made any endeavor to identify syphilis with saphati must, I think, have arisen from his having spoken of the secondary rash as "the Egyptian itch," and his comparison of the pruritus of some syphilitics with that caused by the Egyptian itch. As a matter of fact, he took great pains to make clear the diagnosis between syphilis and the dartrous affection known as the saphati of Avicenna, and which was the frequent precursor of leprosy. With much emphasis he states that the pimples of saphati do not infect, as do those of syphilis, and are of a brighter red color.

Dr. Bonifacio Montejo has also directed attention to the authentic copies of Diaz de Isla's book (dated 1539 and 1542). The work had previously been little known in Europe, except through the faulty Latin translation of Welschius. Diaz de Isla, whose book was apparently written and completed in 1510,

speaks of syphilis as having first shown itself in Barcelona and as having been brought to Europe from Hayti in the middle of April, 1493. Like Fracastorius and de Villalobos, he regarded it as "hitherto unknown, entirely new and never before read of in books of medicine." He tells that he had under his own treatment, before they arrived ashore, men belonging to Columbus' fleet and others who were suffering from syphilis, and that he also treated in Barcelona, prior to the King of France going to Naples, many patients affected with the disease. He explains how the French camp in Italy became affected by many Spaniards joining it from Barcelona.

Objectors Refuted.

By way of discrediting this evidence, it was pointed out that Christopher Columbus landed at Palos, some miles southwest of Seville, and tarried at Seville a fortnight before proceeding to Barcelona. Why did the disease not break out in Seville? it was asked. There is evidence to show that it did. A Servillian physician, Monardes by name, writing in 1580, said syphilis was called "serampion de las Indias;" and Dr. Montejo has shown that as early as 1502 there was a hospital set apart for the treatment of the syphilitically affected in Seville and that the disease was called "serampion de las Indias," because, as the record has it, "when this hospital was built there was no such disease, for it only became known after the discovery of the Indies in 1492." For further details of the writings of these Spanish physicians I refer the reader to Mr. George Gaskoin's articles in the *Medical Times and Gazette* for 1867 (July and August).

Other evidence to discredit the Columbian importation of syphilis into Europe from Hayti was brought forward in the letters of Petrus Martyr, who made out that the disease was known in Spain in 1488, and in Bodmann's "Antiquities of the Rheingau," containing reference to a case as having occurred in Europe in 1472; but both statements have been proved to be forgeries.

Syphilis Probable in England Long Prior to Discovery of America.

But notwithstanding all these facts in support of the Columbian importation of syphilis into Europe, it is impossible to shut one's eyes to other facts which point to the existence of the disease in England, France and other countries a century and a half before Christopher Columbus set out in search of the New World. In England, for example, John of Gaddesden (1340), in his work "Rosa Anglica," when referring to the infection of leprosy from coitus, told of the precautions which should be taken to prevent infection. There is ample proof that there was a contagious venereal disease which went by the name of leprosy; that so-called leprous men and women were capable of communicating an infectious malady to those who had carnal connection with them; that after coition the symptoms always first displayed themselves in the parts through which the poison was conveyed; that only when the pudenda were diseased did the leprous woman convey the infection in coition; that in true leprosy those parts are not disordered; that the disease conveyed by a leprous person in coition was followed by the breaking out of scabs and ulcers all over the body, and bore a greater similitude to leprosy as it is described by the ancients than to any other disease; that some ancient writers, as I stated in my introductory remarks, endeavored to prove that the pox is only one species of leprosy, and that there may be a transition from one of these diseases to the other; that the rebellious nature of these cases of so-called ulcerous and scabby leprosy led surgeons to try a great number of remedies, but that all of them were useless unless mercury was joined with them; that as the dressing of such ulcers was

tedious, the patients were ordered to daub the ointments over the sore and cover them with linen till the next dressing; that following this treatment the ulcers were in a little time healed, the patient's mouths became sore, but that otherwise the patients were cured. It was in this accidental way that the method of salivating by unction was discovered.

It is thus obvious there was a disease which went by the name of leprosy, which was communicated to man by coition with a (so-called) leprous woman, but which was not in reality leprosy. It is also now well known that many deaths from venereal disease were formerly ascribed to leprosy; that leper hospitals were numerous in England up to the time when syphilis was distinguished from leprosy, and that as more more and more patients were recognized as syphilitic, and treated as such, the demand on the leper hospitals correspondingly diminished. In France, as shown by Raymond of Paris, many syphilitics were buried as lepers in the leper cemeteries of the Middle Ages.

Another Englishman, Bartholomew Glanville, who flourished about the year 1360, wrote a book ("De Proprietatibus Rerum") describing as leprous persons with typical tertiary syphilitic symptoms. Among the causes of this sort of leprosy he enumerates the ordinary modes of syphilitic contagion; he describes the infection passing from father and mother to the child, "as it were by Lawe of Herytage"; and speaks of a "childe fedde wyth corrupte Mylke of a Leprouse Nouryce" as being another way of infection. In a word Glanville, in the middle of the fourteenth century, "under the name of one species of leprosy, gives a summary of the symptoms of the pox, and the several ways whereby it is at this time communicated."

When we think of the lack of facility for travel, of the smaller urban population, of the fewer opportunities of irregular and indiscriminate sexual intercourse, and consequently of the fewer cases of venereal diseases in those days, and we also remember how comparatively little opportunity there was for interchanging professional opinions and experiences, we can understand how medical practitioners overlooked the association and casual relationship of secondary and tertiary syphilis with a local sore contracted weeks before, which had healed and to all appearance was finally cured, and perhaps had even been forgotten. It is thus also intelligible how medical men came to associate those syphilitic symptoms with the symptoms of leprosy—the disease which seemed to them to have the greatest analogy to the constitutional and local manifestations of what we now recognize as syphilis.

Before surgeons could regard the primary chancre as the cause of the subsequent symptoms of syphilis, and syphilis as a separate and distinct disease, the lessons and experience of some such group of conditions as those which attended and followed the Columbian importation of the disease were perhaps necessary. Cause and effect would be less likely to be overlooked when all phases of the disease were seen in patients confined on board ship during a long voyage; when the disease spread among troops living near cities and massed together in large numbers; when the course and progress of the disease were intensified and exaggerated by the exposure, deprivations and hardships of war; and when, perhaps, in part owing to the more severe action of a virus taken from one race and infecting a different race, the virulence of the disease assumed, as we are told it did in 1493-95, the characters of an epidemic.

Variations in Virulence at Different Periods.

The virulence of syphilis has varied not only as between races, but in the same race at different epochs. Dr. Ashmead, speaking from personal experi-

ence, says that "a Japanese prostitute whose symptoms appear very mild would always inoculate the European with a vicious type of the disease, even producing in him the type of epidemic syphilis of the fifteenth century in Europe." This, he thinks, is because of the shorter generational experience, extending to only 500 to 600 years, and the consequent inferior measure of immunity or resistance of Europeans as compared with other races—the Japanese and the Chinese, who have been saturated, according to Dr. Ashmead, with syphilis for from between 1300 and 3000 years. The disease in the seventh century in Japan was of great virulence, and is said to have been like the epidemic in Europe in the fifteenth century. Fluctuations at other epochs have been largely caused by fluctuations in the nature of the treatment. In modern times, when iodide has supplanted mercury, syphilis has been seen in aggravated forms. During my own professional life the frightful cases of skin, bone, and visceral syphilis which one used to see have disappeared under the systematic administration of mercury and the employment of antiseptics.

Shakespeare and Syphilis.

Mr. Hutchinson pointed out that I had omitted from my introductory remarks any reference to one of Shakespeare's best allusions to syphilis. No doubt in the quotation given by Mr. Hutchinson from the fifth act of *Henry V.*, Pistol, when speaking of "the spital of malady of France," was referring to a hospital for venereal diseases, and equally, no doubt, alluded to syphilis, "Morbus Gallicus" being one of its many names. My object, however, was not so much to make mention of all the passages in Shakespeare's plays in which some sort of allusion is made to syphilis, as to point out his frequent use of the words "pox" and "pox on't" in the manner of an oath and in much the same way as some persons are in the habit of saying "damn" and "damn it" in the present day. That Shakespeare when using the word "pox" almost always, if not invariably meant syphilis, is to my mind quite certain; and this use of the word as an execration, or an ejaculation implying disgust, shows how uppermost in men's thoughts and how common the disease was in his day. In the same manner as Shakespeare, Ben Jonson and Colley Cibber made use of the same expressions—the former, for instance, in *Every Man in His Humor* and the latter in *The Careless Husband.* Elsewhere Shakespeare uses the word "goujees," meaning "pox," as in Act. V., Sc. iii, *King Lear;* and "good year" in the same sense as "goujees" and "pox," in *2 Henry IV.*, Act. II., Sc. iv., line 64.

As regards Shakespeare's graphic account of syphilis in *Timon of Athens* and his repulsive allusion to the female sexual organs in *King Lear,* why should we associate them with Shakespeare's personal experiences? The characters in a drama must not be supposed always to represent incidents in the life of the author any more than does the hero of a novel. The author made out Timon to be not merely a misogynist, but a misanthrope, bearing a bitter grudge against not only women, but all mankind, because of the ingratitude he had experienced in men; King Lear he described as becoming mad because of the ingratitude of his daughters.

As opposed to the attempt to associate these descriptions with the individuality of the author or to connect the physiognomy and parentage of Sir William Davenant with Shakespeare, I would point out that if Shakespeare was the author and actor of the plays which go by his name, there is nothing in the portraits of the dramatist nor, so far as we know, was there anything in the voice of the actor to suggest that he himself was the subject of the facial and laryn-

geal syphilis, so realistically described by him, or the parent of a congenital syphilitic offspring. If, on the other hand, William Shakespeare was too illiterate to have written the plays, what will the advocates of the Baconian authorship of them say to the insinuation that the writer of "Novum Organum" and the editor of the authorized version of the Bible of 1611 was describing his own diseased plight in words he made Timon of Athens, in the play of that name, utter?

Does Syphilis Heighten the Imagination?

Mr. D'Arcy Power has asked me to ascertain from the psychiatrists the nature of the disease from which the patient was suffering who is described by Horace:

Fuit haud ignobilis Argis,
Qui se credebat miros audire tragedos
In vacuo laetus sessor plausorque theatro.

Here was a man whose delight it was to sit in an empty theatre and applaud the wonderful tragedians to whom he imagined he was listening. But any suspicion as to this delusion having been caused by syphilis is, I think, removed by what Horace tells us a few lines further on:

Hic, ubi cognatorum opibus curisque refectus
Expuli elleboro morbum bilemque meraco
Et redit ad sese.

The man was cured by means of pure hellebore, which, so far as I am aware, has never had ascribed to it any curative influence on syphilis. If it were syphilis from which he suffered, this patient's recovery lends a degree of support to Dr. Pernet's suggestion that syphilis may have played some part in the development of the musical genius of Beethoven, who was said to have been a congenital syphilitic; for Horace goes on to say:

Pol, me occidisti, amici,
Non servasti, ait; cui sic extorta voluptas,
Et demtus per vim mentis gratissimus error.

When the patient recovered, owing to the treatment he had received at the expense of his relatives, he exclaimed, "By heavens, friends, you have destroyed, not saved me; to rob me thus of my pleasure, and take from me by force such a very agreeable delusion of mind."

(To be continued.)

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JAUNDICE CATARRHAL.

Acidi hydrochloridi dil.	f. ʒiv
Tr. nucis vomicæ	f. ʒiv
Aquæ	f. ʒj
Tr. gentianæ comp.	ad. f. ʒiij

M. Sig.: Teaspoonful in water four times a day.

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CATHETER LUBRICANT.

A good formula for a catheter lubricant has the following composition:

Hydrarg. oxycyanidi	grn. iv
Glycerini	ʒv
Tragacanth	grn. xlviij
Aquæ dest.	ʒxxv

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ANOTHER REFORMER.

"Yes, I've cut out the slang stuff," Nell was telling her latest "gentleman friend." "Gee, but my talk was gettin' fierce! I'd worked up a line o' fable material that had George Ade backed off the map and gaspin' for wind, but I've ditched all that now. I seen it was up to me to switch onto another track. Jammed on my emergency brakes one day and says to myself, 'You mutt, where do you think you'll wind up if you don't slough this rough guff you're shovin' across on your unprotected friends? You never will land a Johnny-boy that's got enough gray matter in his cupola to want a real, bang-up, flossy lady for his kiddo instead of a skirt that palavers like a brainstorm with a busted steerin'-gear.' Any girl can talk like a lady, even if she never gets closer to one than to stretch her neck when some swell dame buzzes past in her gas-wagon. I says to yours truly, 'It's time to reformate your grammar, little sister,' and you betcher sweet life I've cut the mustard."—*Lippincott's.*

Surgical Work in Country Practice.*

By HAROLD SOUTH, M. B., Ch. B., (Melb.), Boonah, Queensland.

THE extent to which the country practitioner shall do his own surgical work is a most important and practical question, which has been discussed in this journal many times. The author of this article talks out in meeting with plainness and decision. It will be noticed that he lays the blame for the past state of affairs precisely where we have always laid it, namely, on the country practitioner himself, who has been all too willing to act merely as procurer for the city surgeon. Dr. South does not advocate, nor do we, the indiscriminate undertaking of all kinds of surgical work by the country man, but he does insist that a great deal of surgery which now goes to the city might just as well be done by the practitioner himself, if he will only equip himself to do it.

This is rather in the shape of a protest against the custom that obtains in some districts of sending all surgical work to the nearest large center, or of getting some town surgeon to visit and operate on cases that can not be moved. Any surgical procedure is practicable in the country, even though there may be disadvantages. Methods in surgery are fundamentally identical in country and in town; but it is obvious that methods and results are modified by environment. This modification is not always to the detriment of the country, and especially is seen an advantage in the healing of all wounds, surgical or accidental. It seems impossible often to get any but first intention results, for which the freedom of the air from dust is to be thanked. Disadvantages in starting and continuing surgical country work consists in the main of the following: (1) Overcoming local prejudice, and educating the bucolic populace to the fact that surgery is possible; (2) absence of qualified assistance, both in the actual surgical work and in the giving of anesthetics; and (3) details such as the difficulty, and sometimes failure, in obtaining trained nurses, and the fact that the distances to be traveled make it a physical impossibility to pay the full attention desired.

The first disability is quite important. In this district (Fassifern, Q.), a few years ago it was axiomatic among the inhabitants that only town medicoes could do surgery, and I remember the incredulity that received a proposition to have an inguinal hernia operated on locally. "What doctor will you get from town to do it?" was the question, as though a Bassini required some one extra special in the specialist line. As I have said, it has been the country practitioner who has fostered this belief; and not long ago I was told by a medical neighbor that he had sent eleven appendix cases requiring operative treatment to Brisbane in the foregoing six months. By patient perseverance this belief can be dispelled, and sometimes the swing of the pendulum is annoying, for it is possible to get a reputation for surgical readiness which will affright some people into the idea that only surgical, and no medical, work is done in a particular practice, and that an attack of bronchitis may be surgically treated.

The second disability—the absence of qualified surgical and anesthetic aid—is a big handicap; and, of course, I speak of single-man practices. It is a double drawback, for, when one has to do all the surgical part, the time is longer than if there were assistants; and the prolonged time means more anesthetic

*Read before the Queensland Branch of the British Medical Association, at Ipswich.

given by trained nurse or chemist, under the operator's eye. A panhysterectomy under such conditions is not wholly a joyous experience, and the censorious town dweller will say that no surgical work should be done unless qualified anesthetists officiate. Restriction of the anesthetic to open-mask ether, vigilance, and decent speed in operating, limit the risk to the patient to about normal; though the multiple strain of being surgeon, assistant and supervising anesthetist may result in temporary prostration of the unfortunate who undertakes it. As to nursing, the country belief that any woman will do as a nurse is hard to combat; and gross inefficiency is usually accompanied by a cheerful willingness that is impervious to any suggestion of a change in nursing methods. Often one can not get a trained nurse, the available supply having been cornered by the towns; and, correspondingly often, it falls to the surgeon's lot to do much of the preparatory and after-treatment in the nursing of any nurseless patient.

There is no difference in methods of preparation of patient, instruments, or dressings, in country work. Perhaps one is keener to see that the patient is well prepared when one has to do everything on the operating day; and there is certainly comfort in knowing that all precautions have been personally noted. The iodine method of skin preparation seems satisfactory, though there are recent warnings that, applied to chest or abdomen, iodine may cause the development of adhesions among the contained viscera. Even using it for applying to the stump of an appendix before infolding it, causes no untoward sign. The use of silk for sutures and ligatures seems unnecessary when linen thread is as strong, as sterilizable, and much cheaper. It is anomalous, but true, that the absence of trained assistants brings about the habit of using few instruments. The "small wound" habit is always commendable, as normal tissues are stronger than the best cicatrix, there is less local disturbance, with fewer foreign bodies, *i. e.*, sutures and ligatures than in a larger wound, and a correspondingly enhanced chance of healing decently. A small wound that goes wrong is bad, but a large one is an utter abomination whether in limb, head, chest or abdomen. This "small wound" habit is perhaps doubly desirable in a district such as this, where strenuous work and strenuous sport obtain, and where women will take on any labor at short notice after a gynecological operation. One's conventional ideas of after care of the patient by patient get a shock when one hears of a full day's ploughing having been done by a woman upon whom an operation for ruptured ectopic gestation has been done twenty-four days before.

Country conditions favor asepsis, and the local use of antiseptic lotions is rarely needed; and the continued neglect to wear gloves seems to interfere not at all with per priman results. Gloves are a stand-by, no doubht, and can easily be used when the operator fears his hands may be bacteriologically unreliable, or when he knows that undesirable discharges may contaminate his hands from the part operated upon. The country surgeon is always a general practitioner, and may be called from a suppurating appendiceal condition to a maternity case.

When a chemist or nurse is the anesthetist, it is a comforting practice to all concerned to let the patient have a small dose of morphine and atropine before starting the anesthetic. The patient is more confident and thus takes the anesthetic more regularly and easily, while a less amount of ether is required during the course of operation. Salivation and the swallowing of ether-laden saliva are largely avoided, and so post-operative vomiting and distension are lessened or quite done away with. The dose is small—never more than one-sixth grain

of morphine with one two hundredths of atropine.

Confinement to bed after operative procedure is a vexed question, though the trend is towards shortening the time. Small wounds and first intention healing allow early liberty, and seven days for a Bassini or an undrained appendectomy are surely enough. I have had a muscular patient start training for a boat race fifteen days after a radical hernia operation, and row a strenuous three-mile race five weeks from the surgical date, with the result of making the scar comfortable and elastic. Country patients certainly encourage one to allow them early rising and it is only in very special cases that prolonged confinement to bed is needed.

Reviewing the work done in the local (Boonah) hospital during the last five years, major surgery has included about 250 cases of all kinds. There have been three post-operative deaths—one after myomectomy and ovariotomy; one after pan-hysterectomy and carcinoma of the fundus; and one a ruptured ectopic fetation. In this district there is no marked preponderance of any surgical condition. Ordinary indirect inguinal hernia holds first place; and considering the limited population, the slowly-overcome prejudice in favor of such cases migrating to town, 157 radical cures in public hospital and private work combined is a fair record. The bucolic conditions of female labor, the absence of trained obstetric nursing, and still more the presence of over-officious untrained pseudo-nurses, ensure a good crop of gynecological complaints. For over three years of my sojourn here there was only one appendectomy, and that was from a sac of an inguinal hernia; but during the past eighteen months there have been twenty-three. Malignant disease seems to be increasing, and there is the usual assortment of general surgical cases common to country and town.

To sum up, the natural advantages of the conditions under which surgical work can be reasonably done in the country are greater than the disadvantages, and again I speak of one-man practices. In my experience results will justify any country general practitioner in keeping his surgical work where it belongs. By results, I mean primarily surgical results, though the, of course, minor consideration of an increasing income is not an entirely negligible one in these days of sordid commercialism.

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IMPROVING A PLASTER CAST.

In many instances in the use of plaster of paris dressing, where it is desired that the dressing last for several weeks or more, we are much troubled with the crumbling and cracking of the plaster of paris dressing, no matter with how much care it may be applied. This difficulty may be considerably obviated by the use of paint on the outside of the plaster of paris dressing, when the dressing has been completed.

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AN ANTISEPTIC FOR SURGICAL PURPOSES.

The following formula is given by Watters in the *Pharmazeutische Zentralhallle:*

Cresol	50 parts.
Oleic acid	25 parts.
Ammonia water (0.880)	5 parts.
Water	25 parts.

Mix the cresol and oleic acid, add the ammonia water and finally the water. Shake thoroughly.

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A SINECURE.

A young physician who has not got much practice hired a small colored boy to accompany him in his visits and hold the horse.

"How does yer like yer new place?" asked the boy's mother, when he came home on Saturday night.

"I like it fustrate. We neber has to stop at de houses at all, like udder doctors. I jess gits all de ridin' I wants," was the reply.

Hodgkin's Disease in the Light of Modern Research.*

By A. E. Finckh, M. B., Sidney, N. S. W.

IT IS now more than three-quarters of a century since Dr. Hodgkin first described the disease which now goes by his name. Since that time, of course, our knowledge of its pathology has undergone considerable advancement. It is now almost universally regarded as a specific infectious disease, and it is reasonable to expect that at no distant day we may discover its pathogenic micro-organism. In this article Dr. Finckh gives a complete résumé of the subject, from Hodgkin's day down to the present time. Not much can be said concerning treatment, until we know something definite about the organism which causes the disease.

Dr. Hodgkin, in 1832, described a symptom-complex consisting of progressive, and eventually general enlargement of the lymphatic glands, together with an enlargement of the spleen, and accompanied by signs of cachexia. Seven cases of this type had come under his notice.

Virchow, in 1845, showed that certain conditions of glandular enlargement were accompanied by very characteristic alterations in the blood, chiefly involving the leucocytes. Later on, however, it was shown that the pathologieal enlargement of glands, which is accompanied by such changes in the blood, are altogether of a different type, and that a distinction had to be made between leukemic and non-leukemic glandular swellings.

The name "Hodgkin's Disease" was applied first by Wilks. In 1856 he described a condition involving the lymphatic glands, in general, under the name of anemia seu cachexia lymphatica, but later on he altered this name to "Hodgkin's Disease."

At the time when the name Hodgkin's disease was introduced, the only point which seems to have been settled, was a distinction between leukemic and non-leukemic processes, that is, so soon as the glandular enlargement is accompanied by a definite pathological change in the blood, it has no longer any relation with the condition known as Hodgkin's disease. And even up to quite recently our knowedge has been limited, the nature of the disease remaining wrapped in uncertainties, and it is still a much disputed point as to whether the disease should be classified as one sui generis or not.

As in many other conditions, the fact that the nomenclature of the disease is so various, always varying, and variable to anyone who chooses to do so, is a clear indication that, from a pathological point of view, the subject has been shrouded in mystery. It is thus that we still meet with such terms as progressive multiple hyperplasia, lymphosarcoma, pseudoleukemia, malignant lymphosarcoma, multiple lymphosarcome, multiple lymphomatosis, malignant leukemia, and numbers of more recently introduced terms.

Thus the condition has been looked upon by some as one of true tumor-formation; by others as an inflammatory process; by still others as one closely allied to leukemia. Apart from this difference of opinion, from a pathological point of view, which has led to great confusion, there has to be taken into account the fact that many cases which have been described as coming under the category of the disease, have been shown

*Read before the New South Wales Branch of the British Medical Association.

on analysis to be of a totally different nature, thereby our confusion has been rendered worse confounded.

It is thus no wonder that the clinician and surgeon who may not have the opportunity to decide such purely pathological questions, finds himself quite in the dark, and it can hardly be wondered at that in many cases it has become a matter of—when in doubt call it Hodgkin's disease. And, after all, this method of coming nearest to a satisfactory diagnosis may be quite justifiable, so long as every clinico-pathological method has been adopted to exclude all such conditions which, especially in the early stages, may closely resemble Hodgkin's disease.

The majority of the earlier investigators were inclined to look upon this disease as closely related to the true tumors, whereas now the consensus of opinion is that we are dealing with a granulomatous condition of the lymphatic tissues of a specifically inflammatory type. As regards the etiology of this granulomatous condition nothing is known, but when we consider that the clinical symptoms, and the histological alterations in the affected tissues, in typical cases, are so very characteristic, and so widely differing from the granulomatous swellings, the etiology of which is known, it can no longer be doubted that in Hodgkin's disease we are dealing with a specific infectious disease. And just as, for instance, in the case of tuberculosis and syphilis, the histological and clinical characteristics were known long before the discovery of the specific cause, so may we look forward to the discovery of the organism which plays its part in Hodgkin's disease.

The following definition may then be given to the disease. It is a specific inflammatory disease, mostly of a chronic nature, which almost exclusively begins in the lymphatic system, leading eventually and progressively to universal involvement of all the parts of that system. Metastatic involvement of almost any organ of the body may occur secondarily. If we wish to substitute a more spscifying name instead of the old established one of Hodgkin's disease, the term, malignant, granuloma, should, according to most, be chosen.

The clinical progress of the disease undergoes great variations, so also do we find certain variations in the tissue-alteration of the organs affected, all of which are explainable by the presumption that the etiological factor varies as regards intensity, and that the direction of its progress depends upon the place of entry of the disease. We are enabled to contrast acute forms with the more chronic ones, and localized forms with those of general involvement.

The great peculiarity of the disease is that although the lymphatic system is almost invariably involved, yet such predilection does not seem absolute. In this fact, more than in any other, lies the explanation of the everlasting controversy in respect to the disease.

According to Ziegler, we may speak of two distinct stages of the disease. The first is the stage of glandular swelling, which remains localized; the second is a generalization of the disease. In Ziegler's series of 120 cases the primary swelling occurred in the neck in 50%, on one side only, and involving the glands in the neighborhood of the sternomastoid; 6% involved primarily the supraclavicular glands; 10% showed involvement of the axilliary glands of one side; the mediastinal glands, inguinal glands and the glands of the back of neck each supplied 3%. Nine per cent of the cases showed, as first indication of the disease, a swelling of the spleen. In 12% there was no glandular enlargement palpably noticeable, and in a number of these the post-mortem examination revealed the presence of primarily involved retroperitoneal glands.

From the situation of such primarily infected glands it has been suggested

that infection takes place by way of the nasopharynx, or the larynx, or by way of the mouth cavity. Next in importance seems the respiratory tract, whereas primary affection of axillary and inguinal glands point to an infection through abrasions, etc., in the skin of the extremities. If we accept the theory that the disease is an infection it is certainly remarkable that at the site of entrance there is no sign of damage or disease. As in other diseases the regional glands, as first line of defense, show the first harm done by the invading enemy.

These primary manifestations of the disease may be totally unaccompanied by symptoms; hence, if the swelling is deep-seated the first stage may be totally overlooked. On the other hand, well-marked symptoms may be present, which, in the case of hidden glandular swelling, may be called prodromal. In about 12% of Ziegler's cases such prodromal symptoms were noticed involving the skin and alimentary tract. We thus meet with pruritus confined in some cases to definite regions; in others it is diffuse and involves large areas of body or extremities. In some 5% of the cases, the first symptoms manifested themselves as disturbances of the alimentary tract, anorexia, and severe diarrhea. All these symptoms are of short duration, and may recur during the progress of the disease. In cases of recurrences they are looked upon as a sign of rapid progress of the disease.

If the primary swelling occurs in the mediastinum the first manifestations of the disease are pressure symptoms. The duration of this first stage is exceedingly variable, from a few weeks to several years.

The second stage is the propagation and generalization of the disease. In many cases its appearance is heralded by immense enlargement of the previously involved glands; soon afterwards the glands in the near neighborhood are added to the general mass; then follows the spread of the infection to other parts of the body, beginning, often, with an involvement of the corresponding glands of the opposite side. There seems to be no rhyme or reason in the mode of spreading of the disease; it may be with or against the lymphstream; in the same lymphstream some glands may be missed while others are involved. The advance may be slow and continuous, or it may be of alarming rapidity, leading, within a few days, to the formation of enormous tumors. As a rule the primarily infected glands, especially if in the neck, remain those of greatest dimensions.

The separate tumor masses may remain isolated; on the other hand, neighboring glands may come to form one conglomerate mass. They are movable under the skin, and may be semi-solid, or quite hard. Fixation of the glands to the deeper tissues may occur, their fixation to the skin, however, is exceedingly rare.

The swellings are painless; if pain be present it is due either to inflammatory processes of a secondary nature, or it is a manifestation of pressure on a neighboring nerve. The tumors may undergo considerable changes in size and consistence. Very hard tumors may temporarily become soft, at same time increasing considerably in size. The area surrounding the tumors may show swelling from edematous infiltration, caused by pressure on the lymph path.

Similarly there may be considerable decrease in the size of the tumors. They may almost disappear in one region, while in another the previously unaffected glands take on rapid growth. During rapidly-progressing tuberculosis of the lungs the tumors have been known to diminish rapidly. Pus formation and caseation of the tumors are not to be looked for; when present the change is of a secondary nature. After operative removal of the tumors the liability to recurrence is exceedingly well marked.

This second stage, as it progresses, is accompanied by splenic enlargement in about 70% of cases, and this may assume dimensions resembling leukemia. Together with the involvement of the spleen, the liver usually also shows enlargement and hardening, thus in about 60% of the cases, strange to say, the involvement of the tonsils, which are typically lymphatic structures, is rare.

The involvement of spleen and liver during this stage usually marks the height of the disease, and is heralded by constitutional symptoms of a more or less pernicious character. But apart from these the patient by this time usually suffers greatly from pressure-symptoms, which, generally, are the ultimate cause of death.

Of the constitutional symptoms the most important are cachexia, anemia, and hyperpyrexia. The patient becomes weaker and weaker; is easily fatigued, and loses all interest in his usual occupation. The skin becomes paler and paler; to be finally of a brownish yellow color. In some cases the progress of the second stage is rapid, in others it occupies years; in others again there are intervals of decided well-feeling, alternating with acute downward progress.

Hyperpyrexia is present in a large percentage of these cases. The characteristic of such temperature changes lies in its great irregularity. The curve may be low and varying, it may be high and continuous; in most cases, however, it is high and remittent. Very often we find a temperature of a typically recurrent character, but neither the duration of the febrile condition nor the intervals of normal temperature are regular. The febrile attack, in most cases, is accompanied by great loss of strength which, during the interval, is rapidly regained. Acute swelling of the tumors occurs during the febrile attack, receding during the normal temperature. The blood in most cases shows the alterations of the secondary anemias. The anemia may be of a very severe type.

Death is directly due to cachexia and general weakness in 50% of the cases; in the other half it is due to diseases complicating the original condition, a quarter of these being due to tuberculosis of the lungs or intestines. The duration of the disease is from one to four years; most cases succumb during the first two years. In Ziegler's 70 cases 18% died during the first four months.

We may now touch upon the secondary manifestations. As regards the blood, since Hodgkin's disease is one accompanied by a well-marked inflammatory tissue change, we naturally expect pathological changes in the blood. But if we remember that the disease in one case may be confined entirely to one single group of glands, that in another the entire lymphatic system may be involved, while in others again any variety of parenchymatous tissue, and especially the bone marrow, may be involved; again, if we remember that in one case constitutional symptoms may be entirely absent, while in another they are dangerously significant, it is then hardly to be wondered that an examination of the peripheral blood shows such variations, and does not assist us to any large extent, from a diagnostic point of view, except for the purposes of a differential diagnosis.

It must also be added here that Hodgkin's disease undoubtedly disposes the body to a variety of secondary infections, which, in themselves, give rise to hemotological changes, a fact which, so often, leads to such contradictory statements as regards the condition of the blood.

The changes in the blood consist of anemia, and, to a more or less marked degree, leucocytic alterations.

The anemia is merely an expression of the degree of cachexia present.

The hemoglobin content depends entirely on the degree of the anemia; the other index is always less than one.

The number of red cells in early stages shows no decrease; that is, so long as the condition is still localized. In advanced cases the number is diminished. Ziegler, in 57 cases examined, shows 11 normal counts; 17 gave from 4,000,000 to 5,000,000; 20 from 3,000,000 to 4,000,000; 5 cases from 2,000,000 to 3,000,000, and 4 from 1,000,000 to 2,000,000. The type is always that of a secondary anemia. Microcytosis, poikilocytosis, polychronaphilia are always present in severe cases. Normoblasts are occasionally met with. The blood platelets are increased in number.

As regards the leucocytes there has always been a considerable difference of opinion. Ziegler in his 70 cases gives the following numbers: In 22 cases it varied from 5,000 to 10,000; in 20 cases from 10,000 to 20,000; in 8 cases from 20,000 to 30,000; in 2 cases above 30,000; in 18 cases from 2,000 to 5,000.

Ziegler could not determine any definite relationship between the degree of leucocytosis and the clinical form of the disease; quite the reverse, very variable numbers were found in one and the same type of the disease in different patients.

The only characteristic feature, however, is the relatively common finding of eosinophilia; in 15 cases the percentage varied from 4 to 28. Most cells also showed an increase in 35 of his cases, varying from 5% to 2%.

The neutrophiles in the acute cases were relatively strongly increased in numbers, in the chronic cases there was a slight decrease in favor of the large mono-nuclears.

The lymphocytes were, relatively, and in most cases, also absolutely, decreased in number; acutely so in exacerbations of the disease.

The large mono-nuclears ranged between 10 and 20%.

A specifically diagnostic feature is therefore not to be found in the blood picture, with the exception, perhaps, of the eosinophilia.

All we can say is that glandular swelling with a well-marked eosinophilia must be looked upon as suspicious of this disease.

As regards the temperature Ziegler states that in the large majority of cases there is a condition of fever. It may be absent in the early stages, and may remain absent into the second and third year of the disease, in spite of other acute manifestations. Cases have been recorded in which a rise in temperature did not make itself known until a few weeks before death.

In 12 of his 70 cases the fever was of a recurrent type; the febrile attacks in themselves varied greatly. In one case the attacks lasted from 6 to 22 days, with an afebrile interval varying from 4 to 16 days. The fever in most cases set in suddenly with a rigor; in others the rise was step-like. In one case the temperature rose step-like, continued high from 9 to 12 days, and was then followed by an afebrile interval lasting from 3 to 6 days, when the same curve again occurred. A third case showed, while under observation, febrile attacks with very irregular temperature, lasting 6, 22, 25 and 37 days respectively, the afebrile intervals being 3, 5 and 17 days respectively.

On the other hand some cases showed a continuous temperature, of a slight degree, which then suddenly would flare up into high remittent, and even intermittent, fever.

Here also, as in the other symptoms of the disease, the great irregularity seems to be the most characteristic feature.

With the rise in temperature there may be exceedingly severe pain in the abdomen and along the spine, of a burning, stabbing character, which lasts until the fever subsides.

These alterations in the temperature, like the alterations in the blood, seem to have no relationship to the degree of the disease, or any particular stage thereof. A fact which renders a satisfactory explanation as to the cause of

the febrile condition exceedingly difficult.

According to Ziegler we may speak of the following types of the disease:—(1) The acute form. (2) The localized form. (3) The generalized form. (4) Mediastinal form. (5) The latent type (6) The splenomegalic type. A short history of a case of each type will best explain this classification:

(1) The acute form. The patient complained of glandular swelling in back and left side of neck, followed by enlargement of maxillary and axillary glands; all of which had arisen within four weeks. At that time there was high fever, acute progressive anemia, with a high leucocytosis, the legs were edematous; there was well-marked dyspnea. The swellings continued to increase rapidly, so also the anemia. Death occurred in six weeks from the onset, and was due to edema of the lungs.

Post-mortem examination showed necrotic areas in all the enlarged glands; the esophagus showed an ulcerating infiltration of the mucous membrane; the spleen also showed necrotic areas; but no other glands or organs were involved. The histological examination of the lesions gave the typical features of malignant granulomata.

(2) The localized type. The patient, previously healthy, noticed a small swelling in the neck, which increased steadily but slowly. It remained localized in this region and soon assumed immense proportions. No other glandular enlargements were detected. The clinical picture, however, was that of pressure symptoms on the thoracic organs. Death occurred in six months, due to dyspnea and cyanosis. For several months before death there was a high temperature, of a remitting type. A post-mortem examination showed the disease to be confined to the mediastinal glands, and in direct connection with those of the neck. The retroperitoneal glands and the abdominal organs were quite free.

(3) The generalized form. The patient, previously healthy, noticed a hard swelling in the left side of the neck; within four weeks this reached the size of a walnut. In three months that of a hen's egg. The tumor was removed by operation. Soon afterwards rapidly growing recurrence set in, involving the glands of the supraclavicular region, and spreading to the glands of the neck, of the opposite side. At the end of a year a second operation was performed and the tumors removed extensively. Again rapid recurrence set in, and at the end of a further six months the axillary glands of both sides, also the inguinal glands, were involved. Again extensive operation on both sides of the neck was followed by rapid recurrences. The patient was now losing weight rapidly, and a papular itching exanthematous rash of extremities and sacral region, was present. Tonsils, liver, spleen, were not affected. The urine remained normal; the blood examination showed nothing of importance. The temperature curve showed an irregular fever, lasting from 1 to 3 days, with normal intervals of from 10 to 15 days. At this stage, unfortunately, the patient was lost sight of.

(4) The mediastinal type. This may be called a subdivision of the localized type, involving exclusively the glands of the anterior mediastinum. The clinical picture is characteristic on account of the organs affected by pressure. In small children the seat may be the thymus; in adults a persistent thymus. Following is an illustration: The patient (female), 20 years, showed a small glandular swelling in the right axilla; similar small swellings then appeared in the neck, on both sides, within three months from the first appearance. During the fourth month the patient began to complain of great fatigue and anorexia, together with edematous swelling of the right mamma and arm. The right pleural cavity showed dullness on percussion, puncture gave three litres of clear fluid. The patient

sank rapidly, edema extending to back and abdomen. The temperature was irregularly remitting. The blood showed the following changes: Hemoglobin value, 66%; red cells, 5,000,000; leucocytes, 23,000; polymorphs, 92%; lymphocytes, 2%; large mononuclears, 4%; eosinophiles, 1%.

Post-mortem examination showed a large glandular swelling in the anterior mediastinum, surrounded by large masses of hardened glands. Mesenteric and inguinal glands were not affected; the retroperitoneal glands were hard, but not enlarged. The microscopic examination was typical of the disease.

(5) The latent form. These cases may remain unsuspected for a long time on account of the fact that the only glands involved are those situated behind the peritoneum. The peripheral glands remain totally unaffected. As an example we may quote the following case: Male 39 years, previously healthy. About eight weeks before admission he complained of loss of appetite and sense of weight, and dragging pain in thorax. He gradually became weaker and had to take to bed, with slight temperature and rigors. During the week before admission he complained of headache, vomiting, and slight diarrhea. On admission skin dry and hot, yellowish. The patient looked emaciated; temperature 102°. No glandular enlargement noticed; there were diffuse bronchitic signs. The heart was dilated, pulse 140. On percussion, well defined area of dullness over manubrium sterni. Urine contained faint cloud of albumin. Hemoglobin value, 40%; leucocytes, 4,400. The spleen was enlarged. Within a few days well-marked icterus appeared with meteorism; the temperature varied between 102° and 104°, the patient becoming slightly comatose. Death occurred seven days after admission. Post-mortem examination showed the deep glands of the neck to be slightly enlarged. The spleen and liver were both enlarged, and scattered throughout both were seen typical granulomatous foci. The glands of the mesentery and omentum were slightly swollen. Along the abdominal aorta and iliac vessels, however, were found great masses of swollen glands.

(6) The splenomegalic type. Splenic enlargement occurs in nearly all cases of Hodgkin's disease. In the absence of peripheral glandular enlargement, and when the infection first involves the deep-seated abdominal glands, the disease may spread from these to the spleen, in which organ the disease progresses rapidly, whereas the glands primarily affected are not seriously involved. In such cases the clinical features point entirely to the spleen.

The splenic enlargement may be enormous, nearly approaching the dimensions found in the leukemas. The organ is firm, surface smooth, unless the granulomatous foci lie immediately under the capsule, and thus produce a nodular appearance.

The following case is quoted by Ziegler, unfortunately without a post-mortem examination. The patient, 21 years, quite healthy, complained of pain on the left side of abdomen and diarrhea, which symptoms disappeared after 14 days. After some months the pain reappeared, together with great lassitude, but not the diarrhea. At this stage the patient was considerably emaciated; skin and mucous membranes were pale in color, no glandular enlargements noticeable. Heart and lungs normal. The abdomen was greatly distended by an enormously enlarged spleen. The organ was slightly tender on pressure, firm, and slightly nodular to the touch. Liver not palpable. Blood: Hemoglobin value, 45%; red cells, 4,000,000; white, 3,500; polymorphs, 42%; lymphocytes, 50%; large mononuclears, 4%; eosinophiles, 2%. Temperature only slightly above normal. The patient rapidly became weaker, and died on the eighth day; the spleen continued to enlarge up to the end. Bleeding from the

nose occurred frequently before death. Douglas Symmers mentions a similar case, in which the microscopic examination showed alterations typical of malignant granuloma.

(To be continued.)

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THE BROMIDES IN EPILEPSY.

In the April number of the *Therapeutic Gazette* Collins states, concerning the treatment of epilepsy, that the effect of the bromides is variable, some patients being quite unable to do without them, while others can not take them in any form, even when salt is eliminated from the diet and the dose is small. The author believes that the epileptic fit is reflex in origin, and that the bromides act by raising the resisting power of the brain cells to external stimuli. For this reason their use is always fraught with danger to the mental activities of the patient, and one can not help wishing that the bromide treatment was less extensively used during childhood. He has noted the following bad effects from bromides: great physical reduction, hallucinations, malaise, stupor, degraded habits, edema and cardiac debility, a general lowering of the resisting power to disease, so that sudden changes in the temperature are very likely to be followed by bronchitis and pneumonia. On the other hand, in chronic epileptics who have been on bromide for many years, the omission of the mixture has in many cases been followed by one or more of the following results: Increase in the number of fits, and also in their severity; two cases sprained an ankle during the fits, and in one ecchymosis of the face and neck occurred. Attacks of mania, and a greater degree of malaise following the fits, also were noted. In one case, a female who had been taking strontium bromide, thirty grains, twice daily for several years, the bromide was omitted because she had an attack of pleurisy with effusion. A slight increase of minor attacks occurred as she got better, but after getting up and when convalescent she had 129 minor attacks in a week; potassium bromide, thirty grains twice a day, stopped these very soon. A few cases are quite uncontrollable, without bromide, from mental excitement, contradicting some who are more irritable when they have no fits. In some cases, bromide abolishes the aura of the fit and causes the patient to fall and injure himself in a way he did not do previously. He finds little difference in the two salts he has used principally, viz., strontium and potassium, except that one-half to two-thirds the dose of the potassium seems equal to the larger dose of strontium.

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LARYNGISMUS STRIDULES.

Potassii bromidi.....3j
Sodii bromidi.....3j
Chloral hydrat. .....grn. xlviij
Syrupi simp. .....f. ℥j
Aquae cinnam. .....ad. f. ℥iij

M. Sig.: Teaspoonful every half hour or hour, as required.

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A FABLE LOVE STORY.

At the approach of Valentine Day last year I offered a prize of $5 to the little boys of my Sunday-schoool class for the best short love story. I have one of the stories here, and I am going to read it to you.

Mr. McWade then read:

"A poor man fell in love with a lady whose mother was a rich toy dealer.

"The poor man could not marry the rich lady because he had no money.

"A villain then offered him $50 if he would become a drunkard.

"The poor man wanted the money to get married with, so he agreed; but when he got to the beer saloon, he said:

"'No, I will not become a drunkard even for great riches.'

"On the way home he found a bag of gold. So the young lady married him. It was a splendid wedding, and the next day they had twins."

"Moral: Virtue is its own reward."

THE SICK ROOM.

CARE OF APOPLECTIC PATIENTS.

TILNEY, in the *Long Island Medical Journal,* discusses the sick-room management of these cases as follows:

Feeding and Diet.

Ordinarily the patient may be allowed to go without food for forty-eight hours. At the end of this time fluid nourishment may be given by mouth if the patient is able to swallow, but if a marked degree of dysphagia is present, rectal feeding should be resorted to. It is essential in all cases to make certain that the patient can swallow and always to begin mouth feeding through a long tubed dropper, and later by a spoon introduced well into the mouth. In this way the dangers of aspiration pneumonia and coughing spasms may be avoided. The diet for the first week should be purin-free, consisting of milk and gruels. Tea, coffee, cocoa and all malt liquors must be interdicted. Sugar and eggs may be added to the milk and gruels. Six to eight ounces should be given at each feeding at intervals of 3 to 3½ hours. Particular care should be taken that the feeding is slow and under no circumstances given out of an ordinary glass or cup during the first day or two. Always feed by spoon or dropper until the patient is able to swallow with some degree of ease.

In cases of glycosuria all carbohydrates must be withheld. Cases giving evidence of acute or chronic parenchymatous nephritis do well on Widal's salt free diet. If the patient is unable to swallow it will be necessary to feed by rectum after forty-eight hours. It should be remembered that 500 calories per day is about the limit of absorption from this mode of feeding. Milk is commonly the basis of enemata.

In administering a nutrient enema the following directions should be observed:

1. Quantity of each enema (250 cc.)
2. The tube used should be small and of soft rubber, which must be introduced at least 12 inches in the rectum.
3. The distance through which the fluid is allowed to fall should be 3 feet.
4. Three or four enemata should be given daily.
5. One cleansing enema should be given each day.
6. If the rectum is intolerant and refuses to retain the fluid, a small amount of tincture of opium may be added to each enema and the fluid should be allowed to flow in slowly.

Regime of the Sick Room.

The sick room must be kept as free from all disturbing elements as possible. After the patient has regained consciousness care must be taken to avoid emotional excitement. Friends and family must be made to understand that their solicitations will be of greatest benefit outside of the sick room. The efforts of attention and attempts to participate in conversation with others than those in immediate attendance are always a serious tax on the patient. During the first week it is not advisable for more than one member of the family to be in the sick room at a time. The nurse in charge should be instructed to enforce this regulation. The temperature of the room should be kept as nearly fixed as possible and free ventilation provided. In winter the patient must not be exposed to draughts or sudden changes of temperature so frequently produced by opening the windows wide in order to air the room. This will not be necessary if the temperature and ventilation are made matters of routine care. In summer, when the heat is excessive, a

small electric fan will contribute greatly to the comfort of the patient and lessen the dangers of heat prostration so commonly seen in these cases.

The Bed.

If a choice is possible, the bed should be a single one. The mattress and bedding must be arranged to prevent sagging in the middle and so form a deep depression into which the patient sinks. This may be in part obviated by a board placed between the springs and the mattress at about the middle of the bed. In protracted cases, and particularly for aged people, a special type of invalid bed is convenient and reduces the difficulties of handling the patient. A very satisfactory device of this kind is the Wallace Invalid Bed. This provides several desirable changes in the bed surface and is easy to manage.

Care of the Gastro-Intestinal Tract.

The bowels should be kept freely open by the use of appropriate cathartics. One evacuation is necessary every day. Two or even three movements are needed if this has been the patient's habit before he was stricken. If medication by mouth is impossible, the enema used to cleanse the bowel prior to feeding will usually suffice for emunctory purposes. The mouth and teeth should be kept clean. Some mildly acid mouth wash is especially useful. In some cases excessive salivary secretion becomes a menace to the patient. This is especially true in cases of deep coma. Under these circumstances it will be necessary to swab the mouth out continually. Small doses of atropine or tincture of belladonna will inhibit the salivary secretion in the more severe cases. In order to prevent hypostatic pneumonia, the patient may be rolled over on the sound side three or four times a day. This should not be attempted, however, before the second or third day.

HOUSEHOLD ANTIDOTES FOR POISONS.

The *Physician's Drug News* prints a useful article on this subject. It points out that in treating poisoning cases the following cardinal points may be mentioned:

(a) Kind of poison taken.

(b) Amount of poison taken.

(c) How long since poison was taken.

(a) The kind of poison taken can be determined as a rule, (1) by finding the vial or package that contained the poison somewhere in the neighborhood of the patient; (2) by questioning the patient, if conscious, but care must be observed as to the truth of these statements. The author cites a case of poisoning where the patient had taken arsenic, but deceived the family and the doctor by rinsing his mouth and applying to his hands a weak solution of carbolic acid. On being questioned, the patient stated that he had taken carbolic acid, and it was only by exclusion and the use of the stomach pump that the true poison was discovered.

(3) By signs and symptoms:

(a) Odor: Smelling the breath or hands may indicate any of the following poisons:

Carbolic acid, lysol, creosote, phosphorus, chloroform, camphor, wood alcohol, etc.

(b) Bleached or excoriated mucous membrane of lips, mouth or pharynx may indicate the following poisons: Carbolic acid, lysol, creosote, silver nitrate, lye, etc.

(c) General signs or symptoms, as follows:

1. Convulsions may give a clue to strychnine poisoning.

2. Comatose condition may indicate narcotic poisoning, as morphine, opium, chloral, bromides, hyoscyamus, etc.

3. Dilated pupils may indicate belladonna.

4. Contracted pupils, opium, morphine.

5. Vomiting and purging may indicate antimony salts, copper salts, mercury salts, zinc salts, arsenic.

Amount of Poison Taken.

As a rule, this can be determined as follows: (a) questioning the patient or friends, but care should be taken regarding the truth of the statements; (b) obtaining the vial or package which contained the poison and judging of the size of the same, and also by old marks or rings on the inner side of the vial or package, showing at what level the contents were previously.

How Long Since Poison was Taken.

This can be ascertained as follows: (a) By questioning the patient and his friends, taking care as to the truth of the statements; (b) by the physiological signs and symptoms as they exist.

Treatment.

Having ascertained the kind of poison taken, act promptly by using agents or antidotes that will destroy the poison or make it harmless; then remove it from the system and later treat symptoms as they arise. This is done by first giving a chemical antidote, if there is one; second, by using a mechanical antidote; third, by giving a physiological antidote, and lastly by using after-treatment.

After-Treatment.

1. Purges to remove the altered poison from the system by way of alimentary canal.

2. Diaphoretics and diuretics to aid in eliminating the altered poison by way of the skin and kidneys.

3. Emulsions, such as milk, white of eggs, oatmeal gruel, to soothe excoriated and inflamed surfaces.

4. Treatment of other symptoms as they appear by the proper therapeutic agents.

Household Antidotes.

An antidote for arsenic, that can be very readily obtained, is a tincture of iron mixed with water and enough ammonia added to give the solution the odor of ammonia. This combination forms a magma, and give the entire combination to the patient. The iron, in this form, forms with the arsenic an insoluble compound known as iron pyrites.

The antidote for iodine is a starch solution. This is made by taking about one teaspoonful of starch mixed with about one pint of water and boiled and allowed to cool. This is given the patient *ad lib.* This starch solution with the iodine forms a blue insoluble iodide of starch.

The antidote for lye or household potash is vinegar. This forms with the lye an acetate of potash liberating carbon dioxide gas.

The antidote for morphine and strychnine, which can nearly always be obtained readily, is strong tea. This is made by allowing the tea to stand for a considerable length of time, say about half an hour, and giving to the patient to drink. The tannin of the tea with the alkali forms a precipitate as an insoluble tannate.

The antidote for sugar of lead is any soluble sulphate, either sodium sulphate, known as Glauber's salts, or magnesium sulphate, known as Epsom salts. Either one of these salts is dissolved in water and given to the patient. This forms with the sugar of lead an insoluble sulphate of lead.

The antidote for oxalic acid is lime water freely given. If there is no lime water at hand, plaster from wall will do as well. Break off a piece of plaster, rub it to a powder and mix with water and give it to the patient to drink. This forms with oxalic acid an insoluble calcium oxylate.

The antidote for carbolic acid, creosote and lysol is some soluble sulphate

or alkali. There is a question in my mind whether soluble sulphate acts as the authors have stated. In theory it sounds very well to say that the soluble sulphate forms with carbolic acid a sulpho-carbolate or acetate of magnesium, but the author is inclined to believe that by the time this combination has been produced the patient is in no condition to receive the benefit of the antidote.

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PHYSIOLOGY OF COFFEE.

Knapp, in the *Dietetic and Hygienic Gazette,* states that his very extensive researches have proved that the action of coffee upon the stomach is to cause the muscle of the stomach to strongly contract. The result of this contraction is to excite the glands of the stomach to pour out its digestive juices. If that were the only effect of the coffee, it would be well to use it all the time. but this fact also indicates the danger, because under the whip of the coffee the stomach is forced to yield too much of the digestive juices. As the capacity of the stomach to produce the necessary digestive juices is not without limit, an overexcitement of the stomach under the influence of the coffee must result in injury to the stomach. Another danger in the use of excessive quantities of coffee lies in the fact that coffee is acid. This acidity is due to caffetannic acid; this acid is what is called in chemistry an organic acid. All organic acids, says the author, are irritating to the stomach and produce the disease which I have discovered and which I described in the New York *Medical Record,* September 6, 1902, under the name, "Organacidia Gastrica." It is this disease which has hitherto been falsely known as nervous dyspepsia, and has therefore been called incurable. But when the cause of the disease is recognized to be organacidia gastrica, it is easily cured by following my methods. The improperly prepared coffee and the excessively used coffee may cause the disease just mentioned, which is ordinarily understood and known by the name of "sour stomach."

Coffee has another and a very important action upon the digestive juices of the stomach. The coffee absorbs the hydrochloric acid, and in this way may stop the digestion. The gastric juice contains two principal constituents, without which there could be no stomach digestion. One is hydrochloric acid, and the other is pepsin. If there is absence of the one or of the other, there can not be any digestion. Likewise is the digestion lessened and disease produced if the one or the other is not produced in sufficient quantities. The coffee attacks the hydrochloric acid, and, by combining with it, the hydrochloric acid is removed from the digestive juice; therefore, coffee is injurious to the gastric juice.

My investigations have proved that coffee stimulates the mucous membrane of the stomach, which causes a greater secretion of the gastric juice. Also, that coffee attacks and destroys the gastric juice by combining with and thereby taking away the hydrochloric acid of the stomach juice. These actions of the coffee ought to ve very well considered, as they indicate the exact range of the usefulness of the coffee. A weak stomach, a stomach which requires something to whip it into action, may have a little coffee at the very beginning of the meal. This coffee will cause the stomach to contract and pour out gastric juice. A stomach which pours out too much of gastric juice ought to have black coffee at the very height of stomach digestion, which is about three hours after the meal; the coffee will now bind the excess of the acid of the stomach juice, and by so doing the discomfort and the pain which is the result of too much acid will disappear. This explains the habit in most European countries where dinner is taken at noontime and coffee is taken about three o'clock. Our habit of taking coffee at the end of our din-

ners is an abomination, because, when taken at this time, it helps to overexcite the stomach, which is injurious. If our dinners were to protract for some two and a half to three hours, then the after-dinner coffee would have its legitimate use. But our dinners rarely last more than half to three-quarters of an hour, and already contain sufficient stimulation without the coffee. We therefore see the importance of recognizing the double action of the coffee. Coffee excites the stomach to pour out its digestive juices. But coffee also destroys the activity of the digestive juice by entering into a chemical combination with the hydrochloric acid, leaving only the pepsin; and pepsin alone, without hydrochloric acid, has no digestive powers.

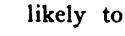
DIET IN BILIOUSNESS.

Fenwick remarks, in *The Practitioner,* that there are two principal complaints to which the term biliousness is commonly applied, the first of which is characterized by the irregular recurrence of certain gastric phenomena designated "a bilious attack," while in the second a complex form of dyspepsia, accompanied by a deficient excretion of bile, is popularly referred to as "chronic biliousness." In the treatment he says that the diminished functional activity of the biliary and pancreatic secretion necessitates the careful selection of a dietary. Excess of starchy material should be omitted in favor of partially predigested cereals and sugars, and, consequently, toast is to be preferred to bread, and the various pancreatized and malted foods to oatmeal, tapioca or sago. Potatoes do not disagree during the earlier stages of the complaint, but uncooked green vegetables and fruits always produce flatulence. Owing to the usual existence of hyperchlorhydria, milk is readily digested when diluted with lime water, and from two to three pints may be allowed during the twenty-four hours. Cream is often distasteful, and fresh butter may be digested with difficulty. Lightly roasted beef and mutton may be allowed once a day, while pigeon, chicken, game, white fish, tripe, sheep's brains and sweetbreads are good substitutes for the less digestible forms of butcher's meat. Veal, pork and meat fat must be avoided, and bacon and ham be tried with caution. Eggs are particularly injurious in many cases.

UNCLEAN MOUTH.

M. H. Fletcher, Cincinnati, in the *Journal A. M. A.,* claims that unclean mouths are probably the indirect cause of more disease than any other source. The general designation of alveolitis he divides into chronic non-suppurative alveolitis, necrotic alveolitis and the acute form. The disease usually starts from local irritants at the necks of the teeth, and of these tartar is the most frequent and constant irritant. The resistance of the tissues may for years prevent malignant infection of the lesions, but the ultimate end, if the patient lives long enough, is the loss of the tooth. Tartar can not be gotten rid of by the tooth, and it causes swelling and inflammation of the gum and pockets into which it penetrates, causing the gum tissue to recede and give rise to a suppuration of the gum and the bony socket of the tooth. In the simple and most common form the pus is not visible, and it is hence called non-suppurative. When pus becomes manifest it produces the suppurative type or pyorrhea alveolaris. Some have contended that this is produced by a systemic cause and that tartar has little or nothing to do with it. Whatever the cause, however, the treatment is the same. The pockets must be sterilized or the tooth removed before it will disappear. The usual result is considerable destruction of bone, sometimes a considerable portion of the jaw has to be removed in advanced cases or necrotic alveolitis. The term acute is used as in other dis-

eases to denote the rapidity and stage of the disease. There is probably, Fletcher says, no disease so prevalent as alveolitis, and no one so amenable to treatment. Prevention is a matter of keeping the mouth clean and the teeth free from tartar. The whole of the operative treatment consists of removing the tartar or other irritant and sterilization, and the patients can learn to keep their mouths clean and carry on the preventive treatment themselves. The condition of the mouth in both adults and children should receive more attention from physicians. The greatest shortcoming in treating the disease is in removing the irritants and sterilizing their sites. The systemic relations of alveolitis receives special notice by Fletcher. Not only is it aggravated by general infections, but in its suppurative and necrotic stages it is a great predisposing factor to and the cause of many bodily disorders, such as pernicious anemia, gastro-intestinal diseases, nervous derangements, etc. He closes his paper with a long quotation from Dr. William Hunter, of London, pointing out the dangers to general health from this affection.



DIAGNOSIS OF DUODENAL ULCER.

Folsom, in the *Texas State Journal of Medicine,* gives a clear description of the symptoms which may lead one to suspect the presence of this condition. There is usually a definite history of a very uniform array of symptoms about as follows: These patients will tell you of their trouble having extended over a various number of months or years, consisting of pain or some kind of discomfort in their stomachs, coming on from one and a half to three hours after eating. This pain or discomfort usually getting worse and at times accompanied by a gaseous distention of the stomach. Almost without any exception they will explain that the pain appearing thus can be almost instantly relieved by taking some kind of food into the stomach. These patients usually go to bed with a cracker or something to eat near the bed, and usually about 1 or 2 a. m. they are awakened by the appearance of this pain or discomfort and after eating the cracker or drinking a glass of milk or even of water, they are relieved entirely and go back to sleep, not to be disturbed until the usual time following the morning meal. In addition to the hunger-pain and the relief afforded by eating they tell of persistent and recurring sour stomach, and have usually been given a diagnosis of hyperacidity, acid gastritis, etc. Moynihan goes so far as to say that "Repeated and persistent hyperchlorhydria is duodenal ulcer." To Falsam this seems extreme, and yet to disprove it would be difficult. By hyperacidity Moynihan means a subjective and not an objective hyperchlorhydria, for when those patients complain of sour, acid stomach an analysis of the gastric contents shows a hyperacidity or even an anacidity. The condition with which duodenal ulcer is most likely to be confused is gastric ulcer, though gallstones or appendicitis may cause confusion. In gastric ulcer there is the same pain or discomfort coming on after meals, but the time of the appearance of this pain is not the same. It comes on immediately or very soon after the meal and is never relieved by taking more food into the stomach, but rather made worse. Vomiting occurs early rather than late, and is a more constant factor, usually relieving the pain or discomfort, and more frequently containing blood. There is, however, the same history of definite attacks, lasting from a few weeks to months, separated by interims of comparative comfort.

THE DOCTOR HIMSELF.

TWENTIETH CENTURY REQUIREMENTS.

WE have known for some time, observes the *American Practitioner,* that employes occupying responsible positions with banks, corporations, trust companies, insurance companies, commercial houses, etc., were required to furnish a bond to their employers, this usually being by a bonding company at a rate corresponding to the financial and other responsibilities of the position. It is also well known that employes so bonded are under surveillance, not only by the bonding corporation, but the institution employing them also. This surveillance includes their habits, both in public and private, as well as associates, male and female. Late suppers in questionable company, theater parties, automobile rides, time, place and conduct when on vacations or week-end trips out of town are all noted by secret agents of the bonding company, as well as of the employers. Any lapse from strict habits of temperance, or conduct in general, late hours, questionable companions, or visits to places of shady morals: saloons, all-night resorts, etc., brings in exceptional cases a warning; usually, however, a request to be relieved from the bond or resignation of the employe.

An instance in point recently came to the writer's knowledge. The paying teller of an old established and conservative bank in a large city in the East, who had been employed in the same institution as boy, youth and man for twenty years, well respected by his friends and acquaintances, trusted by his employers, grew to be a regular attendant at a city club, of which he was a member; whether because he found a more congenial atmosphere there than at home, we do not know. He was sociably inclined and popular; indulged in cards, took two or three drinks of whiskey during the evening, had been seen with other members of the club automobile riding, once with his face somewhat flushed, laughing and joking with some women in the car. The next day an agent of the bonding company notified the bank president that his company wished to be released from the bond given the bank for its paying teller's good behavior. The man was asked for his resignation, and thus came to a halt a most exemplary and promising career. This is not an exceptional case. Happily, however—for the family and friends, as is usual, in like instances—the public never knew why Mr. B. left the bank.

This editorial is not a preachment; does not reflect the writer's attitude towards men's conduct; nor is it a temperance lecture. The reason for its appearance in a medical journal is its bearing on the attitude of employers to exact safe, sane, skillful service from all those hired to do a special work, and especially those who treat the sick. The bank teller had committed no crime, it is true, but was he to be trusted? Is a man when under the exhilarating—or contra—the depressing effect of alcohol as sure of himself; has he the same cool dispassionate judgment, the steady eye, hand, as when perfectly normal? From the bank president's viewpoint, the man who drinks may in a moment of unusual optimism favor "a friend" by loaning him money, signing his note, endorsing his check; engage with him in a questionable financial scheme; go with one equally optimistic—in an automobile—to a gambling house, or to call upon some fascinating ladies; visit a cafe, drink and be seen by a depositor in the bank.

Now, if this can be said of one whose sole responsibility rests with handling other people's moneys, what about the man who has in his care or keeping others' lives?

We are all acquainted with good, brilliant men, physicians, surgeons, who have had a large practice, but are not doing so well now. Others in the same line are doing better than formerly. Is it for lack of confidence in the older or increasing respect for the skillful attainments of the younger? This is an age of discernment; we are growing acute, learning more about health matters; are more appreciative of sound bodies, demand the best in all things that promote and conserve the health of ourselves and ours. It will shock those of the old school to be told that they will not be tolerated in sick rooms with the smell of whiskey on their breath, but the fact remains that strict abstinence from indulgence, if not now universally demanded, is rapidly approaching. He who observes will learn.

THE PHILOSOPHY OF A SCIENTIST.*

By VICTOR C. VAUGHN, M. D.,
Ann Arbor, Mich.

It may be asked what right has a scientist to have a philosophy? He spends his days in the study of gross, material things. The geologist busies himself with the earth, the composition and the structure of its crust, the nature of its rocks and other formations, the fossil remains of geologic ages, the elevation of its mountains, and the forces that tend to level the same. These and correlated subjects furnish the material with which his mentality employs itself and upon which it exhausts itself. The astronomer goes further afield and employs his time in the study of the moon, sun and the stars, but all his activities are materialistic. The biologist concerns himself with the development and modification of the various forms of life. His field is a wide and interesting one. The physicist is engaged in the observation of mass, and the effect of forces thereon. The chemist goes into the atomic structure and arrangement of matter. The physiologist is busy with function and the pathologist with abnormal structure and function. So we might go on enumerating the varied and multiple duties of the scientist, but, after all, his range of activity is confined to material things and what does he know of the higher life? What right has he to interest himself or to offer to speak with any authority on the great problems of life? What can the scientist know about idealism? Between material and idealism there is supposed to be a great chasm, which no man in his right senses would attempt to bridge. The scientist may be a silent follower of the idealist, but has no right to make even a suggestion, and to attempt to point out the way is the height of assumption on his part. The idealist is supposed to walk on a higher plane than the poor, materialistic scientist. The former dwells in the clouds. His food is the nectar of Olympus, and he spins his raiment from the philosophical theories evolved from his inner consciousness.

That I have not misstated the attitude of the modern idealistic philosopher toward modern science is shown by the following quotation from the work entitled "The Problem of Life," by Professor Eucken, of Jena. This book secured for its author the Nobel prize in 1908. In speaking of the theory of evolution, Professor Eucken says:

"We are not concerned with the theory in its scientific aspect, but merely as it affects the attitude toward life. From this point of view it is of paramount importance to keep the two stages of the doctrine clearly distinct. It is mainly the theory of natural selection that has ventured to come forward with a new and original view of life. By

*A popular lecture given in the summer school at the University of Michigan, July 2, 1912.

completely assimilating man to nature, it leaves the shaping of man's life with the forces which appear to control the formation of natural types. Life is thereby robbed of all that had given it inner worth, and dignity; the form which it takes is determined solely by circumstance, and is maintained only in so far as it proves serviceable in the struggle for existence. Advance is only made when properties which chance has brought together are maintained on account of their usefulness, inherited, and in the course of time wrought into the species. But since there can be no inward appropriation of this gain, there can also be no joy in the good and beautiful for their own sake. All we win is simply an added means of self-preservation. We have already seen in Adam Smith the effect of a doctrine of mere utility in lowering the status of the inward life, and here we see it in its extreme form. The inward life loses all independent value. The only right is the right of the stronger; all humanness, in particular, all care for the weak and suffering, would simply take the heart out of the struggle, and therefore be a piece of pernicious folly. If in this blind medley of conflicting forces there be anything at all left for us to do, it can only be to make the struggle for existence as hard, persistent and ruthless as we can, so that all the unfit may be weeded out, and the process of selection be made as speedy as possible."

This is the estimate placed upon the doctrine of evolution by one of the foremost of modern philosophers. Notice that he speaks of the scientist *venturing* to suggest something bearing on the problem of life. Rash and foolish scientist, what right has he to make a suggestion concerning the higher life? He should have known that the realm of philosophy is wholly beyond the domain of science, which concerns itself with only things material. The learned author objects to completely assimilating man with nature. This implies that he thinks man, in part at least, supernatural. If so, in what particular, may we inquire? If man is not shaped by the conditions under which he is born, his ancestry, and those under which he lives, his environment, pray tell what does shape him? Why the various races and varieties? If there be something supernatural in man, something that is not determined by natural conditions, why are there physical differences, intellectual inequalities and moral deviations among different peoples and among the same nations in successive generations? How many Pasteurs, Goethes or Shakespeares has the Ethiopian produced? This supernatural part of man in which the modern philosopher believes must be very capriciously distributed, and how is the distribution determined? Is blind chance the agent, or is the distribution made by some fickle god? Professor Eucken says that the assumption that types of men are determined by natural conditions robs life of all that gives it inner worth and dignity. Types of men exist. This can not be denied. If they do not result from natural causes, what are the supernatural agencies that bring them into existence? There are good and bad types of men, then there must be good and bad genii. The truth is, the philosophy of Professor Eucken is a mental remnant of the primitive man who believed in a geocentric universe, peopled Olympus with gods, good and bad, and filled the woods with satyrs, nymphs and fairies. If the learned author knew something of science he would be more of a philosopher. He speaks of the inner life losing all independent value if man is affected by external conditions. I infer from this that he makes the inner life the supernatural part of man. It is impossible to tell what he means by the inner life. If he means man's mentality, we know that this is affected by natural conditions. Strike a man on the head and depress his skull and his mentality is disturbed. Under the

influence of such a poison as alcohol he may become insane. If by inner life he means man's morality, there again are abundant evidences that man's morality is affected by external conditions. The insane are not criminally responsible, and a man with some foreign body driven into his brain may become a liar, a thief or a murderer.

The commendation of science by Professor Eucken for its cruelty can be explained only on the assumption that he fails utterly to comprehend the doctrine of evolution. Is the science of eugenics, whose object is to secure healthier and better parents for the unborn, cruel? Are all our efforts toward securing wholesome water, unadulterated food, hygienic housing, and, in short, the betterment of life in every possible way, cruel? Do we improve our breeds of horses, cows, dogs, etc., by turning them out without shelter in the most rigorous weather, and who proposes to improve the types of man in that way? No philosophy evolved from the inner consciousness of man has ever done man half the good that has been secured to him by the discovery of the agents of infection. In fact, no important discovery in science has failed to better the lot of man. The printing press disseminated knowledge. The discovery of illuminating gas drove crime from the streets of large cities. The telegraph and telephone have hastened the detection of the criminal. Steam and electricity are driving the wheels of the manufacturing world and distributing the products of all climes. Improved machinery is shortening the hours of labor and lifting from man's shoulders his heaviest burdens. In short, I know of no scientific discovery which has not contributed to the physical, intellectual and moral betterment of the world, and certainly this can be said of nothing else.

The foundation stone of my philosophy is the doctrine of evolution, the truth of which has been abundantly and positively demonstrated by geological, embryological and biological evidence. I shall not attempt to establish the soundness of the theory of evolution. I consider this already done.

Through countless ages this development has been going on. The time was in the history of this planet when the conditions of temperature, moisture, etc., were such that life as we know it could not have existed. But this does not mean that life in some form did not exist. By life we mean that combination of matter and energy by which the former is endowed with the capability of growth and reproduction. Such a combination of matter and energy might have existed when the earth was a molten mass, without water upon its surface and without the present atmospheric envelope; but the life of that time, if there were any, was quite different from any form of life as we know it. All physiologists hold to the dictum: Omne vivum ex vivo, and some say: Omne vivum ab eternitate ex vivo. However this may be, the primordial forms of life have developed into the present forms. The simple in structure and function has become more complex in both these directions. The unicellular has evolved the multicellular. The undifferentiated protoplasm, under the stimulation and guidance of natural selection and environment, forces which we with all our studies only vaguely comprehend, has been differentiated into the tissues, systems and organs possessed by the world of life as it exists today. Soft tissues have protected themselves with cartilaginous and bony structures. From the invertebrate the vertebrate has developed. Organs especially devoted to digestion and assimilation have been evolved. Muscles for locomotion have come into existence. The vascular systems for the distribution of blood and lymph have been slowly and gradually elaborated, and every part of the complex and highly developed animal has been placed under

the control and direction of the nervous system. The highest product of this wonderful and complicated development is man. Science has not only taught, but has demonstrated, all these things. Man, though far still from perfection, has reached a stage when he has become the most powerful and direct agent in evolution. He takes the grasses of the field, the flowers of the plains, the trees of the forest, the lower animals in their native states, and makes them almost anything he wishes. By breeding and selection, by altered and improved environment, and by modification and control of the conditions of life he is able to do these things. From prehistoric times he has been cultivating, developing and improving the grains which serve him and his dependent animals as foods. With the dog, horse and cow he has developed special breeds to suit not only his needs, but even his whims. He has filled his gardens with a profusion and variety of flowers such as unaided nature has never produced. His orchards furnish his table with luscious fruits, so attractive in appearance, so great in size and so delicious in flavor that one can hardly realize that they have come from the wild varieties. Natural selection has been largely replaced by human selection, and who shall say that this is not natural? But best of all is the fact that man is himself an animal, yes, all animal, and therefore capable of being improved by breeding, selection and improved environment. Were man, even in part, other than animal or supernatural, and not influenced by natural and controllable conditions, the hope of his improvement would not be so great. A supernatural force, if there be such, is one which man can not know, can not study, can not modify, and if such a force controls the destiny of the race, man's attempts to improve his kind must be futile. A philosophy founded upon such a belief leads nowhere, stimulates to no good deed, and is barren and dead from the start. On the other hand, the belief that man himself is the most potent factor in evolution should call out the best effort in every one interested in the welfare of his kind. If my work can make two blades of grass where only one has grown, can so improve the native grain, which barely returns the seed sown, that it will produce a hundredfold; can convert the diminutive, sour, wild apple into the large, mellow, delicious pippin; can convert the native, scraggy pony, barely subsisting on the sparse growth of his native range, into the high-bred, well-developed, spirited, intelligent horse; can change the thieving, slinking wolf that once followed the nomadic man in order to feed upon the sparse remnants of his scanty meal, into the noble, intelligent dog that has become man's companion; above all, if my work can aid ever so little in bettering the condition of my fellow man, either in the present or in future generations; if these things be true there is every incentive to do what I may in the accomplishment of these things. Who can say that the doctrine of the descent of man from the lower animals degrades him? On the contrary, it shows what man has done even with the slight enlightenment of the past, and it points to the heights to which he may reasonably hope to climb in the future.

I believe in heredity, that like breeds like, and the good or bad in the parent will pass on to the child. This belief in heredity does not lead me to spend my time in studying ancestral records. No, I let the past take care of itself. It is gone and can not be changed. I like to think that all my good impulses come from my ancestors, and that my bad ones are due to acquired sins. But for the great lesson taught by our knowledge of heredity we should look to the future. Generations to come may make inquiry as to their ancestors, and then they may mean you or me. The young man of today who gives himself to drink and venery is preparing himself to be the father of degenerates, imbeciles and

insane. That degeneracy is inherited there can be no doubt. Statistics collected in widely separated parts of the world show this to be true. Fortunately, good qualities are equally inheritable. Could there be a higher incentive to any one to keep himself clean physically and morally than this? If so, I have failed to hear of it. Science teaches us that our actions and even our words are parts of the environment in which those about us live and may influence them for good or ill, and may live through their effects upon others, and through them on generations yet unborn. Yea, more, our thoughts, even though unspoken, have their part in shaping ourselves. They constitute a part and an important part of our environment. Was there ever a higher incentive to righteousness in deed and purity in mind than this? Whether I shall do a certain thing or not should not be determined by hope of future reward or by fear of future punishment, but by its effects. Some of the most atrocious deeds recorded in history have been performed under the belief that religion and God were being thereby served. Such were the tortures of the Inquisition.

The doctrine of evolution teaches that environment is a powerful factor in the modification and improvement of species, and experiments upon plants and animals have confirmed these teachings so repeatedly and so positively that no sane man can question it. My philosophy, therefore, points out a way in which I can render a real and lasting service. I will therefore give my best endeavor to improve the conditions under which men live. This should be one of the strongest motives in the work of the scientist. Indeed, it should actuate the deeds of all intelligent men and women. The old Latin proverb: "Salus populi suprema lex est," which I should translate: "The welfare of the people should be our highest concern," is a good motto under which we should live and labor.

Ignorance is bad environment, and therefore we should labor to dispel it. Ignorance should be replaced by knowledge, and this shall make us free and strong. That knowledge which we can use is the best. As one of England's historians has said:

"The knowledge which we can use is the only real knowledge; all else hangs like dust about the brain or dries up like rain drops off the stones."

The scientist, even though he be a rank materialist without any belief in the supernatural, with no thought of any personal existence beyond the grave, has his dreams of the future. He dreams of the time when the engines of destruction will be so powerful and certain in action that war will be impossible, and the world shall become one great community of enlightened, intelligent human beings, dwelling in peace and unity. He is striving not to send souls to heaven, but to convert earth into heaven. He dreams of a time when agriculture shall have been so perfected that the harvests shall supply of fruits and grains such as the world has not yet seen, an abundance for all. He dreams of a time when there shall be no suffering or want, when every man shall labor and every man shall possess in equal abundance. He dreams of a time when there shall be no premature death, when sickness and pain have been abolished through the wisdom of man. He dreams of these things, not with the hope that he individually may participate in them, but with the joy that he may aid in their coming to those who shall live after him. It is more blessed to sow than to reap.

Science teaches, more effectually than any religion has ever done, the necessity of lending a helping hand to those in distress. The spread of infection has been a powerful agent in demonstrating to man that the condition of his less fortunate fellow is a matter of real concern to himself.

(To be continued.)

REFRACTION.

INSUFFICIENCY OF CONVERGENCE.

By Dr. Caillaud, in *The Review Francaise d'Optique.*

(Translated by *The Optical Journal and Review* by Robert Minturn.)

I CALL attention here to a frequent difficulty in vision, which a thorough examination will easily detect. Insufficiency of convergence is far more frequent than is generally believed and many patients have no other cause for the various symptoms of which they complain, therefore, it is proper not to neglect searching for this defect of convergence.

Convergence is produced by a synergic contraction of the two internal recti muscles, which turn the eyelid inward when the eyes are used for near vision. Thus muscular effort will be the greater the nearer the work is brought, also the farther apart the eyes are and the larger the eyeballs. This is why we find this condition so much more common among people with large noses and eyes far apart, and among myopes who have to make an extra strong effort to read at close range, an effort which is still further increased by the fact that their eyeballs are larger than usual.

Certain cases predispose to the appearance of the phenomenon. General disability, no matter what the case may may be, may cause symptoms of fatigue in reading.

A period of hard work may force the ocular muscles to a prolonged effort which will tire them. This difficulty may not appear in youth, but can come on and be accentuated with age.

Not All Have Symptoms.

Patients may have insufficiency of the convergence without noticing any symptoms. Others are very much annoyed. Some complain of temporary double vision when using the eyes for near work; but what we hear complained of the most among these patients is ill-defined symptoms of fatigue and uncomfortable vision. We find other subjects who complain of symptoms of ocular asthenopia, headache before or after the use of the eyes for near work, uncomfortable vision while reading or writing, which may render all such work difficult, if not impossible, reddening of the eyes, lachrymation, fluttering of the eyelids, blurred vision for distance after eyes have been used for near work, etc. These symptoms show that the subject has put too much work on the internal recti, the effort being accompanied by symptoms of fatigue. When we watch a case of this kind, we will note that while reading one of the eyes follows badly the movements of the other. We may notice at the end of a little time that one of the eyeballs turns outward. In other cases, convergence is absent, the subject fixes with one eye alone, and is unable to bring the two visual axes to meet in the same object. But most of the time we will notice nothing abnormal in this general examination, and it is therefore necessary to employ more exact methods.

Without wishing to go deeply into a study of convergence we will recall certain fundamental points. The position of the eye in fixation for infinity corresponds to the punctum remotum of convergence. The nearest point from the eyes where an object is seen single corresponds to the punctum proximum of convergence. The distance between these two points is the range of convergence.

The amplitude of convergence is the measure of the power of the internal recti muscles; to turn the eyes from the punctum remotum to the punctum proximum of convergence. This complitude is measured in meter angles. The meter

angle is defined by Nagel as corresponding to the angle formed by the two eyes in fixing an object at one meter. This amplitude is the reciprocal of this distance. At 50 centimeters the meter angle will be 2. At 2 meters it will be ½, etc. The intrinsic value of this angle varies with the distance betwen the eyes, but this intrinsic value is of no special interest. What is important is the power of the action of the muscles which results in the meter angle.

Fixity of Gaze Not Good.

In order that the use of the eyes may be comfortable, it is necessary as a general rule not to keep them constantly in the same position. Everybody knows that sometimes it is necessary to read at the usual distance and sometimes to bring the work much closer, because of small letters or bad lighting, etc. Therefore, there is a range of accommodation and a range of convergence in the use of the eyes. The customary distance in reading and writing is between 25 and 35 centimeters for an ametropic or hypermetropic eye, although this distance may have to be less with a myope.

Now in order to keep within these limits it is necessary, on the one hand, that the amplitude of accommodation shall be four diopters; that is to say, the punctum remotum of accommodation shall be at 25 centimeters. On the other hand, the amplitude of convergence must be about 6 meter angles, so that the punctum proximum of convergence may be 16 to 18 centimeters.

It may be asked why the punctum remotum of convergence should be nearer than the punctum proximum of accommodation. The reason for this is easy to understand. In the first place, in many cases, the relation between the accommodation and the convergence is such that they converge more than they accommodate, or to put it better, they accommodate and converge too much; this is a fact of common observation. Up to the age of presbyopia, the accommodation being greater than four diopters, the individual makes use of this surplus accommodation in many cases. This makes it necessary that his amplitude of convergence shall permit him to do this. Furthermore, beginning with presbyopia, the individual must be satisfied in ordinary work with an amplitude of four diopters, which permits him to see distinctly at 25 centimeters; but this does not prevent him from seeing things at a nearer distance, though not so clearly.

In this latter case, his convergence must have a sufficient amplitude, and then there is another reason. It is that while a person with amplitude of accommodation of four diopters can read easily at 25 centimeters, and that without tire an amplitude of four metric angles of convergence will not permit such reading. The muscles become easily tired, if they are kept at the extreme near point of convergence. They must have a reserve convergence, so it is easy to understand that every emmetropic subject that does not have six meter angles of convergence can easily have insufficiency of convergence.

In myopes the punctum remotum of accommodation being nearer, the amplitude of convergence will have to be greater. This explains the presence of insufficiency of convergence in myopes.

The punctum remotum of convergence can be measured directly or with the help of the ophthalmodynameter of Landolt.

In detecting insufficiency of convergence we note the position of the eyeballs in reading, or we can note subjective symptoms brought out in the test for reading.

Making the Test.

We ask the patient to fix an object close by with his correction on, and we then cover one of his eyes with the hand. If we make this examination systematically in all cases we will often observe that the converted eye sometimes is not looking in the right direction, that it converges incompletely. This weakness

of the internal rectus on the covered side may not show itself until after a little while. In uncovering the eye rapidly it turns in and looks in the right direction, which is a proof that it was previously converging badly, and that an effort has to be made to cause the internal recti to function. In other words, the convergence is not what it should be.

This observation may be made in a great many subjects, in others the symptoms will be more marked. The covered eye may have no tendency to converge and when uncovered it incompletely fixes. Again in other cases it does not fix at all, and the subject reads with only one eye. There are some who read with one eye and sometimes with the other, each of the eyes converging separately. The left eye commences to read the line of letters when the right eye stops.

We can search for the equilibrium of the eyes with the diploscope. In many cases making the test with the four letters seen systematically, we note that the subject does not read them in the right order. The images are crossed; there is exophoria. If the subject converges too much as in hypermetropes, the facts noted will be the opposite. In the test with three letters, with binocular vision of the middle letter, we rarely discover double vision. These tests show that each eye separately converges poorly, but that the need of binocular vision results in an excess of innervation to the muscles, in order that vision may be clear.

Where certain subjects do not possess monocular fixation we may make use of the bar placed before the page to be read.

In general there are a number of patients who have defective convergence. It is true that they converge apparently properly, but it is with effort, sometimes with fatigue. At any time they may suffer from this insufficiency, although many of them have no serious trouble, just as is the case with hypermetropes and astigmats, not corrected, and who do not suffer at all from their defects of refraction.

Does this mean that we must take no action in these cases, which seemingly are so slight? We think it is useless to insist on the importance of the proper functioning of convergence in order to get good binocular vision.

The Line and Dot Test.

There is a simple method of detecting this insufficiency; measuring it, and even to a certain extent of detecting the indications for the correction.

Draw on a sheet of paper a vertical line upon which appears a black dot. Put a trial frame upon the patient and place in one of the cells a prism of 10 degrees vertically, the base being either above or below. Diplopia will be produced for near fixation, say at 20 centimeters. If the subject converges normally he will see only one vertical line with two black dots, situated one above the other. If he fixes with only one eye he will see only one black dot. In this case it is sufficient to place a colored glass before one of the eyes in order to discover which eye fixes. If there is insufficiency present the vertical diplopia will be accompanied by a horizontal diplopia, and the subject will see two vertical lines, one higher than the other. Keeping the subject's head exactly at a distance of 20 centimeters from the paper, we place stronger and stronger prisms in the cell of the trial frame with the base toward the nose, so that the two lines are made to come nearer together until we bring them into one line with two black dots. The prism which produces this effect measures the insufficiency, and the value of the amplitude in meter angles will be half of the value of the correcting prism expressed in degrees.

What treatment will correct insufficiency of convergence? Since it is admitted that the convergence is produced by the contraction of the internal recti muscle, the ideal treatment will be that

which is addressed directly to the muscles in order to give them the force which they lack. Unfortunately outside the surgical operations of muscle advancement, it would seem quite difficult to obtain a result by such treatment. Advancement is indicated in those subjects who have a tendency to strabismus.

In the other cases, since we can not act directly on the muscle, we must combine ocular hygiene with an appropriate optical treatment. The subject should not do too much work which forces him to work at close range, nor should he work at anything which requires close application or long periods of time. He should always hold his work as far away from the eyes as possible in order to reduce the effort of convergence.

It is always necessary for him to wear for near work the optical correction which his refraction requires, taking full account of presbyopia, a proper centering of lenses, in particular his work should be interrupted by frequent periods of rest; his bodily health should be kept in the best condition possible; personally we should try to reduce the convergence by the use of prismatic glasses. We wish to emphasize that durable relief is to be had in certain cases by this method, but it is not always so, and there are some patients who find it entirely impossible to wear a prismatic correction.

Arrangement of the Prismatic Correction.

A prismatic correction should be divided equally between the two eyes. If the patient can wear the prismatic correction found subjectively in the test by vertical diplopia, it will be well to have him wear this correction combined with the glasses that correct his ametropia. We are often compelled to begin with low power prisms.

The prismatic effect desired can be obtained by decentering the lenses provided the size of the lenses will permit sufficient prismatic effect. The prism must be placed with the bases toward the nose. Convex glasses will be decentered in and concave glasses out. Apparently insufficiency of convergence has no tendency to correct itself spontaneously; on the contrary, the defects which it produces appear to become greater and greater with increasing age.

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THE VITREOUS CHAMBER.

The vitreous chamber, observes Max Coque, in *The Optician,* is the cavity occupying about four-fifths of the interior of the globe, limited in front by the crystalline lens and suspensory ligament, and laterally and behind by the retina. This cavity is filled with a jelly-like material, known as the vitreous humor or vitreous fluid, which consists of little more than water with about 0.1 per cent of proteids, namely, serum-albumin and globulin, as well as organic or inorganic salts; a few scattered branched cells, as well as wandering leucocytes, are found in it.

Where it is in contact with the retina, the vitreous humor is defined by a glazy structureless membrane, the hyaloid membrane, which is adherent normally to overlying retina. This membrane is continued forward beyond the ora serrata, and for some little distance is adherent to the pars ciliaris retinæ. A little further forward, however, it leaves the ciliary processes, and, stretching inward, as an independent, structureless, or faintly fibrillated, inelastic membrane, the suspensory ligament is attached to and becomes fused with the anterior capsule of the lens.

During life the vitreous humor is in contact not only with the posterior surface of the lens, but also with the back surface of the suspensory ligament. After death, however, through changes in the vitreous humor, a space is formed, of triangular shape in section, between the suspensory ligament in front, the lens on the inside and the vitreous be-

hind; this cavity is often spoken of as the canal of Petit.

According to some authors, the canal of Petit exists during life and possesses a hind wall, which is furnished by a membrane, distinct from the hyaloid, which defines the front of the vitreous humor. If, as asserted by many authorities, the back capsule of the lens is imperfect, there must be such membrane in front of the vitreous, since, when the lens is extracted from the capsule in a cataract operation the vitreous humor does not escape into the vacant cavity.

The vitreous body, together with the aqueous, serves a mechanical purpose in preserving the natural form of the eyeball and the proper relations of the dioptric surfaces to each other and to the retina. The refractive index of the vitreous (averaging 1.336) is no nearly identical to that of the cornea and aqueous fluid, that for the purpose of calculation the three indices may be regarded as equivalent.

The transparency of the vitreous seems perfect when examined in the normal eye with the ophthalmoscope, but by looking at a uniformly bright light, as the sky, it is possible to see shadows which are cast upon the retina by opacities in the medium. These opacities are due to connective-tissue cells and leucocytes floating in the vitreous. They are called *muscæ volitantes* because they appear to the subjects as flies flitting before the face. They do not interfere with vision, except when in disease, and pathological multiplication of these cells takes place.

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THE TRIAL CASE.

Remove the lenses from the lensholder and place therein a 3. D. convex spheric lens. Proceed as with 2. D., with this exception, add thereto .25 D., .50 D. and 1. D. The verified results will then be as follows: 3. D. + .25 D. = 3.25 D. The indicator will point to the 12-inch line; mark this line 3.25. 3. D. + .50 D. = 3.50 D.—11-inch line—mark 3.50; 3. D. + 1 D. = 4. D.—10-inch line—mark 4.

Refer to the table showing the comparative value of inches and diopters and mark the focometer in accordance therewith. By all means memorize the table; do not proceed any further with the lecture until this has been done.

The object in being so explicit in regard to the notation or numbering of lenses and the manner in which the value of the unit is increased by the addition of the aforementioned fractions is to teach how to mentally and quickly add, subtract and then transpose from one system to the other. Since addition, subtraction and transposition play an important part in the manipulation of lenses to correct visual defects, every minute spent in learning how to handle lenses and mentally calculate their values will undoubtedly prove inestimable.

Inches	Diopters.	Inches.	Diopters.
320	.125	8	5.00
160	.25	7	5.50
80	.50	6½	6.00
60	.62	6	6.50
52	.75	5½	7.00
40	1.00	5¼	7.50
36	1.12	5	8.00
32	1.25	4¾	8.50
26	1.50	4½	9.00
22	1.75	4¼	9.50
20	2.00	4	10.00
18	2.25	3¾	10.50
16	2.50	3½	11.00
14	2.75	3¼	12.00
13	3.00	3	13.00
12	3.25	2¾	14.00
11	3.50	2½	16.00
10	4.00	2¼	18.00
9	4.50	2	20.00

NOTE.—The table showing the comparative values of inches and diopters is not strictly accurate. However, since most test lenses are numbered nearly in accordance therewith, it is here used on that account. Landolt's table is accepted as the most accurate table.

It is now presumed that all instructions have been complied with, and that a fair knowledge pertaining to the contents of the right-side end compartment of the test case has been gained. However, should there be anything herein

stated that is not fully comprehended, carefully review until fully understood. Do not attempt to study the contents of the left-side end compartment of the case until this is understood.

Contents of the Left-Side End Compartment.

The left-side end compartment of the tray of the test case contains concave spheric lenses. These lenses are also known as spherical concave lenses, minus (—) lenses, minifying lenses, negative lenses and dispersive lenses.

They are named concave spheric lenses because their curved surfaces represent spherical hollows or concaveness. Their synonymous terms, minus, minifying, negative and dispersive, indicate as follows: Minus and minifying indicate that they apparently "take from" or reduce the size of an object focus—a concave lens has a negative indicates that rays of light passing through them are not brought to a real focus—a concave lens has a negative focus, but not a real one; dispersive indicates that they disperse or scatter rays of light in passing through them.

Method to Readily Discern Concave Spheric Lenses.

If an object be gazed at through a concave spheric lens held before the eye and the lens be removed the viewed object will appear to move in a determinate direction. The direction in which the object will apparently move is the same direction in which the lens is moved—the movement of the object will be with the movement of the lens.

Take a 2. D. concave spheric lens from the case; hold it a few inches before the eye and gaze at any object; slowly move the lens toward the nose—the object gazed at will apparently move toward the nose. Move the lens toward the temple—the object will apparently move toward the temple, and so on for any direction in which the lens is moved—the object gazed at will always apparently move with the movement of the lens. Any concave spheric lens can be discerned at a glance with this simple method.

NOTE.—Again read all of the note following "method to readily discern convex spheric lenses."

Notation of Concave Spheric Lenses

Concave spheric lenses, like convex spheric lenses, are numbered by, or according to, both the inch method and the dioptic method. With the inch method they are numbered in Paris inches according to their radii of curvature. To understand the numbering, it will be necessary to first understand the mode or manner of determining their focal power.

Mode of Determining the Focal Power of Concave Spheric Lenses.

The manner of determining the focal power of concave spheric lenses differs from the mode of determining the focal power of convex spheric lenses.

As has been plainly shown, convex spheric lenses are numbered to indicate their *real* focal power. Whereas, concave spheric lenses are notated to indicate their *negative* focal power.

To explain the manner of determining the negative focal power it will be necessary to first partly explain their action. In other words, we must first explain how concave spheric lenses affect the light that passes through them before we can explain the mode of determining their focus.

When parallel rays of light pass through a concave spheric lens they are diverged or spread outward and never come to a real focus. The amount of divergence depends upon the curvature of the surfaces. The greater the surface curvature of the lens the greater the amount of divergence. The surface curvature of a 6. D. lens is greater than the surface curvature of a 2. D. lens; hence, a 6. D. lens will diverge the rays more than a 2. D. lens will.

If the surface curvature of the lens were to be increased (that is, if the lens was more concaved) the emergent rays would then become more divergent—they would be spread outward more; their forward prolongations would meet or come to a negative focus at a lesser distance in front of the lens. The lens would have a shorter negative focus and a greater focal power.

Were the surface curvature of the lens to be decreased (that is, if the lens was less concaved than as cited in the first instance, the emergent rays would then be less divergent; their forward prolongations would come to a negative focus at a greater distance in front of the lens. The lens would have a greater negative focal length and a lesser focal power.

In the second instance—increased surface curvature of the lens—we will suppose that the emergent rays are so divergent that their forward prolongations come to a focus at 10 inches (4. D.) in front of the lens. The negative focal power of the lens would be 10 inches, or 4. D.

In the third instance—decreased surface curvature of the lens—if the forward prolongations of the emergent rays would come to a focus at 40 inches (1. D.) in front of the lens, the negative focal power of the lens would be 40 inches, or 1. D.

Summarily stated, the number of a lens depends upon its radii of curvatures, and what has been stated in reference to the surface curvatures of convex spheric lenses holds equally good in this case; with this exception, when a plane piece of glass (plano lens) is taken and one of its surfaces concave spherically ground until the radius of curvature of the surface is 10 Paris inches, the lens would be a number 20 inch—would be numbered 20; but when rays of light coming from infinity pass through the lens they (the rays) will *not actually* meet or come to a focus at 20 inches, or at any point; it is the forward prolongations of the incident rays that meet or come to a *negative* focus about 20 English inches in front of the lens.

Also in case both surfaces of a plano lens were concave spherically ground until the radius of curvature of each surface was 10 Paris inches; the lens would be called a No. 10 inch—it would be notated or numbered 10. The lens would be a double concave spheric. Most test cases have double concave spheric test lenses.

From what has already been stated as regards the two methods, viz.: The inch method and the dioptric method of numbering lenses, the student should have but little difficulty in transposing from one method to the other.

The construction of concave spheric lenses will be more fully explained further on, under indicative heading; and we will now pass on to the contents of the central compartments of the tray.

Contents of the Right-Side, Center Compartment.

The right-side center compartment contains convex cylindric lenses. These lenses are also known as plus (+) cylinders.

They are named convex cylinders because they represent or are the same as lengthwise segments or sections of solid cylinders. They are the same as a segment of a cylinder paralled to its axis.

Methods to Readily Discern Convex Cylindric Lenses.

The cylindric test lenses in most cases are either double-lined by a diamond scratch or frost ground at their edges. Each cylinder also has two short diamond scratches extending from the periphery inward and toward each other. In some test cases the cylinders have only two short diamond scratches. These markings indicate the axis of the cylinder.

Now take an 8. D. convex cylinder from the case and examine it. Notice that one surface of the lens is perfectly

flat or plane, while the other is convexedly ridged; hence, the term plano-convex cylinder." Hold the lens about two inches in front of the eye, the convex ridge (the axis) vertical, and gaze at any object; slowly move the lens upward and downward, and notice that the object gazed at does not appear to move. Hence, "when a convex cylinder is moved in front of the eye in the direction of its axis, objects gazed at do not change their positions." Hold the cylinder in the same position as before and slowly move the lens toward the nose—the object gazed at appears to move toward the temple; move the lens toward the temple—the object gazed at appears to move toward the nose. Hence, "when a convex cylinder is moved in front of the eye in a direction opposite to its axis, objects gazed at appear to move *opposite to the movement of the lens*"—objects appear to move the same as when a convex spheric is used. Hold the lens in front of the eye, ridge (axis) vertical and gaze at a straight edge or a straight line; slowly rotate the lens toward the right; that portion of the line seen through the lens is displaced *away from the axis of the lens;* rotate toward the left—the line will also be displaced *away from the axis of the lens.* Hence, "when a convex cylinder is rotated in front of the eye a portion of straight edge or line gazed at is apparently displaced *away from the axis of the lens.*"

The student is advised not to proceed any further with this lecture until a convex cylinder can be discerned at a glance. Take the different convex cylinders from the case; hold one of each number before the eye; rotate it, while gazing at any object, and notice the movement of the object; be able to detect the movement with the "weak" (.25 D., .50 D., etc.) numbers as well as with the "strong" (3. D., 4. D., etc.) numbers. In fact, do not fail to be able to discern any convex cylinder by merely seeing the apparent movement it causes. This is absolutely necessary, as the skill in neutralizing lenses depends upon the ability to detect various movements or absence of movement.

Convex cylindric lenses are notated or numbered according to both the inch method and the dioptric method.

With the inch method the radius of curvature of the ridge in Paris inches represents about one-half the distance in English inches at which rays of light will be brought to a focus back of the lens. For instance, if the radius of curvature of the ridge is 5 Paris inches, rays of light passing through the cylinder will be brought to a focus at a distance of about 10 English inches back of the lens. Hence, the cylinder would be numbered 10-inch, and so on for all convex cylinders inch numbered.

To simplify this, let us again refer to to focometer. Arrange the focometer and a lighted candle in a darkened room —as previously instructed—and place the strongest convex cylinder in the lens-holder. Slide the lens-holder forward until the indicator points to the 10-inch (4. D.) line and look at the screen. Upon the screen will be seen a long and narrow band of light. The margins of the band will be clear and well-defined; but if the lens-holder be slid, either closer to or farther from the screen, the margins of the band will become blurred and indistinct. This shows that rays of light coming from the candle meet or come to a real focus at about 10 English inches back of the lens. The fact that the refracted rays form a long narrow band upon the screen shows that the cylinder (in fact, any plane cylinder) refracts light in one meridian (direction) only. Also notice that the band of light is parallel with the axis of the cylinder. Rotate the lens in the holder and notice that when the axis (ridge) of the cylinder is in a horizontal plane the band of light will be projected upon the screen in a horizontal plane; when vertical the band will be vertical, and so on for any plane.

With the dioptric method the radius of curvature of the ridge represents one-half the focal length of the cylinder. Thus, if the radius of curvature of the ridge is 1. D., (39.7 or, for short, 40 inches), parallel rays of light passing through the lens will meet or come to a focal line at 2. D. (80 inches) back of the lens, and so on for all the different numbered convex cylinders.

The refraction of light by convex cylinders will be explained further on under an indicative heading, and we will now pass on to contents of the left-side center compartment of the tray of the test case.

NOTE.—Before proceeding any further the student is advised to use the focometer and verify the numbering of convex cylinders, and in that way become able to easily understand how the focal power of a cylinder is determined in accordance with the dioptric method. Follow the same instructions as were given in regard to determining the focal length of convex spheric lenses.

(To be continued.)

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COMPRESSION OF THE LUNG IN TUBERCULOSIS.

Lapham, in the *American Journal of the Medical Sciences,* observes that there are hopeless cases of pulmonary tuberculosis which can not recover with ordinary methods of treatment under the most favorable circumstances. There are also cases that are unable to hold a recovery after it has been made. In these cases, if the lung can be compressed, and kept so for a sufficient length of time, recovery will usually follow. Fifty per cent of advanced cases treated by compression have been reported as permanently cured.

The durable nature of the recovery under this form of treatment is worth considering. Instead of the uncertain restraint of an encapsulating process, with all the dangerous factors of the disease merely rendered latent, we have their complete and permanent removal, and as a result the lung becomes healthy and clean. The disappearance of the tubercle bacilli removes a source of infection months before it can be accomplished in any other way.

The course of recovery is helpful subjectively. The certainty and precision of the method permit a great deal of liberty and the sense of security gives buoyancy to the patient.

When should we attempt to compress a tuberculous lung and when not? If complications exist, sufficient in themselves to forbid recovery, it will avail little to compress the lung. If the sounder lung is not too much involved, it may be greatly benefited by the removal of toxins from the other lung. At present it is generally agreed that only advanced and hopeless cases are suitable for the method. Forlanini, however, urges its use in early cases. Murphy says that the method is pre-eminently indicated in the early cases because they forestall practically the only obstacle to success, namely, pleural adhesions.

A lung that is not densely infiltrated and has no adhesions is easily compressed, and the results are brilliant. The dangers and difficulties increase in direct proportion to the amount of lung infiltrated and held out by pleural adhesions, to the degree of obliteration of the pleural cavity, to the distention of the pleural vessels, and to the amount of clotting that has occurred in the pulmonary vessels.

A conservative plan is to give the patient every opportunity to recover by the usual methods, provided always there is no danger in waiting. If, after persistent efforts, the temperature can not be reduced, nor the extension of the process checked; if after making a good recovery the patient is unable to hold it, but loses whenever any physical effort is made; or if there is some complicating factor, like vicious menstruation that predestines failure—then an attempt to aid the patient by compressing the lung seems amply justified.

MEDICAL PHARMACY.

CREMULES (CREMULAE).

SIR JAMES SAWYER, of Birmingham, who has reintroduced or invented many forms of medicamentation, advocates in *The Lancet* the employment of chocolate cream as a lozenge basis. He supports his recommendation by showing that the fruit basis, simple basis, rose basis and tolu basis, are insufficient for the growing requirements of the modern laryngoscopist, and he recalls in a pleasing manner the scant recognition of lozenges by Dr. Paris and the Pharmacopœias of the eighteenth century. This is what Sir James writes regarding the practical side of the question—the one which will most interest our readers:

I desire to draw attention to a new vehicle which I have found useful in practice—namely, the "chocolate cream." As we know, chocolate is made by triturating in a heated mortar the roasted seeds of the theobroma cacao, freed from their husks, with an equal quantity of sugar (saccharose), and making the mixture into a paste with water, having flavored it variously, as with vanilla or with cinnamon; and the "cream" is made by filling a small globular envelope of this mixture with a small portion of milk, which has been mixed with sugar and evaporated by the aid of fire to a pasty consistency. It is this latter paste which should be medicated from our prescriptions by the pharmacist. Some skillful members of the craft have succeeded well in carrying out my own wishes to such purpose. Such medicated trochiscus we may prescribe, for example, thus:

Menthol ..... 1-10 grains.
Ol. eucalypt..... 1-5 minims.
Pastæ lactis.....q. s.
Pastæ nuclei cacao.....q. s.
Fiat trochiscus, sec. artem.

Or the pasta lactis in each trochiscus may be medicated by the addition to it of a grain or two of borax, or half a grain of sulphate of zinc, or a minim of oil of turpentine or of oil of cajuput, or half a minim of oil of anise.

Finally, suggestions are made that these trochisci be called cremules, Latinized as cremulæ, and that when quickness of preparation is to be wished for unmedicated ones can be medicated readily by remedies which are liquid in their form, by injecting a minim or so of the medicament into the center of a "simple" cremule, by the aid of a hypodermic syringe.

In commenting thereon, *The Chemist and Druggist* suggests that very presentable creams can be turned out by any neat dispenser without the aid of special apparatus. The first step is the preparation of a quantity of "cream," which generally belies its name by containing neither milk nor cream. These ingredients are unnecessary, as without them we are able to provide what is required, *i. e.*, a smooth, slowly soluble paste of pleasant taste. Briefly, the manipulation is as follows:

Take

Pure cane-sugar..... 1 pound.
Glucose (syrup)..... ¼ pound.
Water, a sufficient quantity to dissolve.

Boil this solution until the temperature reaches 240° F. Pour out on a clean and damp ointment-slab, and leave until nearly cold. Then work it with a spatula as if it were an ointment until the transparent syrup has changed to a smooth white cream. It is advisable to knead it with the hands to insure smoothness and freedom from lumps.

This is the basis of our cremules, and what is not required for immediate use may be stored in a covered pot. If a damp cloth be placed on top of the cream, it will keep good almost indefinitely.

Those who are familiar with pills and suppositories will have no difficulty in

preparing medicated creams, as the manipulation is practically identical. The medicaments are incorporated either by trituration in a mortar, exactly as if it were a pill-mass, or the cream may be melted at a low temperature and the other ingredients stirred in. Commercially, the creams are formed by being run into depressions made by plaster-of-paris molds in trays filled with powdered starch in the same way as the familiar pastilles are molded. Unless the pharmacist means to make a specialty of some particular cremule, it is unnecessary to have them molded, as the soft, plastic, medicated cream can be quite easily divided into pieces of the required weight—30 to 90 grains—according to the amount and character of medication. These pieces can be roughly formed by hand into any of the usual shapes. Mathematic uniformity of shape is not at all necessary. If the creams have been molded in starch, they require a few hours to cool and set, are brushed with a soft brush to remove adhering starch, and are then ready for coating. The coating mixture has the following ing composition:

Pure chocolate .....5 parts.
Powdered sugar.....3 parts.

The chocolate, which may be obtained in blocks from the lozenge makers, is pounded in a warm mortar until reduced to a smooth paste, and the sugar gradually incorporated, with constant trituration until a smooth mixture results. This mixture requires plenty of hard rubbing, and should be tested for smoothness in the mouth.

The chocolate should melt away gradually and evenly, and when this condition is reached, it is ready for use. It may be flavored, if desired, with a trace of vanillin dissolved in spirit. A sufficient quantity of this sweetened chocolate is melted on a water bath; an ointment-pot in a pan of warm water is more suitable than a shallow vessel. Into this the medicated creams are dropped three or four at a time. After a moment they are removed singly with a fork or long-handled spoon and dropped on waxed paper, then put in a cool place to harden. They require careful handling, and should be dispensed in shallow capsule or cachet boxes, preferably each in a small souffle case. If carefully manipulated, the finished chocolates will be similar in appearance to the more expensive varieties sold in the best shops. As a matter of fact, they have been produced by practically the same process. Before attempting the preparation of cremules, it is advisable to critically examine an assorted lot of the confectioner's chocolates. These will suggest many possible variations in the consistence of cream, which varies with the temperature to which it is boiled, color and flavoring. A consideration of these points will enable the pharmacist to contract formulæ which will be satisfying to the physician and pleasant to the patient.

IRRITATING AGENTS.

Thomas Blair thus discusses and classifies the irritating agents of the external materia medica:

Escharotics and caustics are in less employ, owing to the advances or surgery and antisepsis. Potassium hydroxid (caustic potash) is too diffusible, and should be used only with the utmost of care. Of the acid escharotics, glacial acetic acid may be applied to warts; but nitric acid should be displaced by mercuric nitrate in solution or ointment, or by a 20 per cent solution of chromium trioxid. Phenol has a useful place, owing to its superficial action. Lactic acid is applied to tuberculous affections of mucous membranes. Perosmic acid is used in the removal of tumors, but the really awful odor of the stuff, due to its poisonous vapor, condemns it. In general, it is well to avoid the acid escharotics, even in the treatment of chancre. A neglected escharotic of value is ammoniated mercury; it is but

slightly escharotic, but is strong enough for many purposes. Zinc chlorid is too slow and painful an escharotic to be favorably considered. Silver nitrate (caustic stick) is so valuable and its action so well understood that we can omit discussion thereof. Sodium ethylate (concentrated alcoholic sol.) is an escharotic of value because its action can be immediately arrested by applying chloroform. This agent is sometimes employed as a depilatory on account of its action being so readily controlled. The sulphids of barium, calcium, sodium and strontium, as well as other agents, are similarly employed, as will be described in a late paper. Arsenic trioxid seems to possess a selective affinity for diseased tissues; its use will be discussed in a later paper upon cancer.

Vesicants are in active although reduced use. But we have come to know that blisters are not applicable to infants, the aged, sufferers from diabetes, nephritis, and persons whose tissues are prone to gangrene. Care must be taken that vesicating agents are not absorbed.

Cantharides is the only vesicant worthy of serious consideration, although glacial acetic acid, chrysarobin, mezereon and volatile oil of mustard are effective. Cantharidal cerate is now but little used, having been displaced by the cantharidal collodion and the rubber-base plaster containing cantharides. It is even more important with these preparations than with the old cerate to cleanse the skin with soap and finally with alcohol or vinegar, before applying the cantharidal preparation. The rubber-base plaster should have applied to it a little film of oil before using.

Rubefacients should, according to Brunton, be placed over the larynx, ovaries and nerve trunks for affections of those parts; over the ensiform cartilage for disturbances of the stomach, above or below the knee for rheumatism of the leg, behind the ear in facial neuralgia, at the back of the neck for cerebral troubles, and along the dorsal region to influence the womb.

Alcohol, chloroform liniment, mustard, turpentine stupes, capsicum, camphor and iodine, the latter usually in combination, are rubefacients filling all general indications. Saponated petrolatum (liquid petrolatum, 2 ounces; oleic acid, 1 ounce; sp. ammonia, 4 drachms) is an excellent vehicle for most of these agents. There are many other rubefacients in general use; we will consider here a few special drugs which, from the point of view of the dermatologist, are rubefacient or resolvent.

Tar is an agent with which one may more readily do harm than good; useful in chronic skin diseases, it has been very carelessly employed entirely outside of its proper indications. Oil of cade and ol. rusci (from European birch) are usually better substances for the inexperienced dermatologist to use, but he may prescribe:

Ol. picis liquidæ.....f3i.
Sulphuris præcip.....gr. xxx.
Adeps lanæ .....v3.
Petrolati .....3iii.

Misce et ft. ung. et sig.—Rub in morning and night.

Or

Ol cadini:.....f3ii.
Adeps lanæ .....3vi.
Ung. picis liquidæ.....3iv.
Liq. sodæ chlorinatæ.....f3iii

Misce et ft. ung. et sig.—Apply freely.

Ichthyol, 1 to 4 per cent, is keratoplastic, stimulating the corneous layer in diseases like intertrigo; in 10 to 20 per cent, it is keratolytic, destroying the horny layer, and is vasoconstringent, antiparasitic and antiseborrheic; it is especially valuable in erysipelas. Thiol is a weaker substitute.

Resorcin acts similarly to ichthyol, but is also valuable as an antipruritic. Only the pure white should be used.

Chrysarobin is an efficient stimulant to the skin and is used, 2 to 10 per cent, in psoriasis, chronic eczema, favus, etc. Do not use over large surfaces. It is

very dangerous to the eyes, and ruins clothing with which it comes in contact. A very efficient combination consists of chrysarobin, 5 parts; salicylic acid, 2 parts; ichthyol, 5 parts; vaseline, 88 parts.

Salicylic acid is a slow solvent of the epidermis, separating it from the corium without inflammation; use in 10 to 25 per cent ointment, collodion or plaster.

Thiosinamine is a valuable resolvent, especially of cicatricial tissue. Used in 10 per cent glycerino-aqueous subcutaneous or parenchymatous injection. Fibrolysin is a ready-prepared solution used in many conditions.

Mercury and iodine are too familiar to demand comment. There are other resolvents of value, but lack of space precludes description.

Antiseptics and germicides are drugs or chemicals so well understood that, in these comments upon drugs, they are omitted.

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DIGITALIS.

There are few remedies, observes the *Medical Standard,* of such generally recognized value as digitalis. It was introduced into use in regular medicine by an English physician, William Withering, 1785, and the principles which he laid down concerning the quality and character of the drug, and the conditions in which it may profitable be employed, have remained about the same during the last 127 years, through all which time its merit has been almost universally acknowledged. It is only within very recent years that we have been compelled to revise Withering's ideas.

For instance, Withering laid down the rule that wild-growing digitalis plants were more potent than garden-grown plants, and this view is still generally accepted by most of the pharmacopeias; but recent careful examinations, made by Edmunds and others, have shown that the domesticated plant is just as efficient medicinally as the wild one. In England the plant is generally grown in gardens, and the merit of English leaves has been well established, though recent studies have shown the German leaves to be rather the stronger on an average, while American leaves, formerly thought wellnigh worthless, have been grown successfully of good quality in the Botanical Garden at Washington, and at the State University, Madison, Wisconsin.

Nor has it been definitely proven that leaves gathered just before flowering, in the second season, are necessarily more potent than those grown in the first or third years, or those collected in the fall. Furthermore, Focke has shown that plants grown in the same district may vary widely in strength, some being shown to be fully twice as strong as others; while Edmunds has found two standardized tinctures made by the same house to present toxicities in the ratio of 1 to 2, and unstandardized preparations from the same manufacturer in the ratio of 1 to 4 in strength.

These variations in strength are not easily detectable. The drug can not be satisfactorily assayed by chemical methods, and manufacturers now generally standardize them on animals. Various manufacturers employ different animals, but the frog is employed by most, although some prefer the guinea-pig, and Hatcher advises the use of the cat.

The physiological activity of digitalis depends upon the presence of certain glucosides. Our knowledge concerning which we owe principally to Scmiedieberg and Kiliani. These glucosides are (1) digitoxin, which is the most potent and the slowest in action of the group: it is insoluble in water, and soluble in alcohol and chloroform; (2) digitalinum verum (true digitalin), not readily soluble in water, but more so than digitoxin; it is quite plentiful in the seed, less so in the leaf; (3) digitalein, which is water soluble, but otherwise resembles digitalin closely; (4) digitophyllin, somewhat resembling digitoxin; (5) digitonin, which is a saponin-like body. All these glucosides are heart tonic and

vaso-constrictor except digitonin, which is a depressant and vaso-dilator; this is said to be inert, when used alone, but in the plant adds to the solubility of digitoxin. Another glucoside, known as "gitalin," has recently been described.

It is to be noted in passing that very little digitonin occurs in the leaves, the principal source of supply being the seeds. German digitalin, as it is called, is obtained from the seeds and is theoretically supposed to contain from 50 to 60 per cent of digitonin, 5 or 6 per cent of true digitalin, the remainder consisting largely of digitalein. It is probable that much of the German digitalin is made largely from the leaves and consists principally of digitalein, which is one of the most generally useful of the digitalis glucosides.

The official preparations in most general use are the tincture, fiuid extract and infusion. The action of all three is probably much the same. For many years it has been insisted that the infusion was more diuretic than the other preparations, but Hatcher has recently made the statement that the glucoside content of the three is essentially the same. The digitonin of the leaves (which was supposed to be responsible for the diuretic action of the infusion) exists in small quantity only, and is also present presumably in the tincture. The diuresis of the bulkier preparation is probably mainly attributable to the larger quantity of water employed in its preparation.

VERATRUM VIRIDE.

This is an important agent in medical practice, says A. J. Crance, in the *Eclectic Medical Journal,* and has always held a conspicuous place in my medicine case. I have invariably found it to be one of positiveness in action, always doing good when properly indicated. It is pre-eminently a drug for sthenic conditions; the more pronounced this picture the more actively it may be pushed to effect; when this has been accomplished, it should be discontinued, or the dosage very materially reduced. It is usually called for during the onset or early periods of acute febrile movements, when the circulation is active and the vessels overcharged with blood, as evidenced by the full, bounding pulse, obstructed capillaries and congested facial expression.

Whilst veratrum is classed as a poisonous agent, its toxic features are but rarely manifested, owing to its property of exciting the vomiting centers and otherwise in non-toxic doses opening the avenues of elimination for its removal, therefore is non-cumulative. Medicinally, veratrum viride is primarily a radio-vascular depressant and sedative, with antispasmodic properties as a secondary result. On the heart, it reduces its pulsations and lowers the tension; on the arterial circuit it causes a relaxation with softening of the pulse. The combined influence serves to lessen the temperature of the body in febrile states. In exalted action of the circulatory system its power over the momentum of the heart is readily demonstrated by the exhibition of the agent in five to ten-drop doses of the specific tincture given hourly or half-hourly for a few repetitions. It is unwise to employ the drug in this manner, except we have a definite object of accomplishment in view, as occurs particularly in convulsive diseases and especially of a puerperal nature. Ordinarily the fraction of a drop or two-drop doses, repeated once hourly or even two hours, will best serve the purposes for which veratrum is usually employed. Thus given, its action over the circulatory apparatus is regular and steady, gradually overcoming the rapidity of the heart's impulse, reducing the tension of the arterial vessels, relieving the engorgement of the capillaries and inducing transpiration from the skin; which in the aggregate brings about a physiological state of nature approximately that of health, or

places the systemic forces in a receptive mood for auxiliary treatment.

It is understood when speaking of veratrum in controlling the rapidity of the heart's action that it applies in direct opposition to the use of digitalis for the same purpose. The digitalis heart is rapid and feeble, whilst the veratrum heart is rapid and hard or bounding. The inconsistency of a combination of these remedies, which I have now and then seen, is clear, and the practice is extremely illogical.

The symptomatic condition calling for veratrum is in some respects the same as that for gelsemium, which is frequently indicated in combination, and thus united are workers in harmony, owing to a synergistic influence contributed by gelsemium.

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IGNATIA.

William M. Gregory, in the June number of the *Medical Summary,* considers ignatia the very best tonic we have, and medica will. He states that ignatia fills a place that can not be filled by nux vomica or strychnin. Besides being a cerebrospinal stimulant, it has qualities as a nerve sedative and reconstructive which make it an exceedingly valuable remedy in all weak and excitable conditions of the nervous system. It should be used in many cases where the compound syrup of the hypophosphites is usually used, and also in many disturbed conditions of the female nervous system, where bromids and chloral are generally employed. He reports cases in which its valuable tonic properties were shown, and states that it is a remedy, or, rather, one of those peculiar vegetable remedies, that will not reveal their true curative principles to chemistry. It contains a large percentage of strychnin, but its field of action differs from that of nux vomica or strychnin. Its great value lies in the fact, which should be universally known, that it is the most powerful remedy we have to allay great nervous excitement, and at the same time give the patient permanent strength and improvement. He prefers ignatia, cinchona and dilute phosphoric acid to the hypophosphites, and he recommends it after any long and exhausting illness. It is excellent in checking the night sweats of greatly exhausted patients. He also prefers the specific tinctures of ignatia and cinchona to the pharmacopeial fluid extracts.

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PHARMACOLOGY OF CHLOROMORPHIDES.

From the results obtained with experiments on dogs, says the *Pharmaceutical Journal,* referring to an article by Harnack and Hildebrand in *Archiv. Exper. Path.,* it appears to be very important that apomorphine intended for medicinal uses should be free from chloromorphides. These compounds have similar but more intensely toxic effects than morphine, and have no emetic action. *a*-Chloromorphide is more powerful than *b*-chloromorphide. The typical action of the respiration is very marked, and the sensibility is suppressed. The lethal dose is markedly higher than that which produces marked reaction. Animals recover very rapidly after exhibiting alarming symptoms. In general, the properties of chloromorphide resemble those of the acetyl derivatives of morphine, and are, with dogs, antagonistic to those of apomorphine.

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COMPOUND CARBOLIC ACID OINTMENT.

Phenol	½ ounce.
Mercuric nitrate ointment	1 ounce.
Sublimed sulphur	¼ ounce.
Olive oil, by weight	½ ounce.
Yellow beeswax	½ ounce.

Melt the beeswax in the olive oil by heating on a water-bath, add the sulphur gradually, mix thoroughly, and when nearly cold add the phenol and stir until dissolved; then rub the mercuric nitrate ointment in a mortar until smooth, and incorporate with it the previously prepared mixture.

ELECTRO-THERAPY.

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ROENTGEN DIAGNOSIS IN MEDIASTINAL TUMORS.

RUSSELL H. BOGGS, in the *Medical Era,* observes that the value of the Roentgen rays as a diagnostic agent in the examination of tumors of the mediastinum, is being constantly demonstrated. Any shadow, either to the right or to the left of that, cast by the normal mediastinal contents can be accurately determined. Abnormal widening of the mediastinal shadow may be due to a number of pathological conditions.

After the plates have been made, the interpretation requires careful study, together with due consideration of the clinical symptoms.

The following conditions may be the cause of the widening of the mediastinal shadow: aneurism, tuberculosis, carcinoma, sarcoma, Hodgkin's disease, fibroma, dermoid cyst, hydatic cyst, lipoma and enlarged thymus.

Before examining the mediastinal enlargement, it is important to observe whether there are any abnormalities as to the formation of the chest and spine. Diseased vertebræ with displacement may push the aorta aside and stimulate aneurism or mediastinal tumor.

The shadow of the normal aorta, when examined radiographically, either anteriorly or posteriorly, is almost totally obscured by the superimposed shadow of the sternum and the vertebral column, with the exception of a small shadow to the left, caused by the lateral aortic bulge. It can easily be seen that a very small aneurism may be overlooked, if only anterior and posterior radiograms are made. In order to detect a small aneurism, it may be necessary to make an oblique examination, but as a rule, in the case of an enlargement which can not be determined in the dorsal or prone position the rays are of little value. The diagnosis of a small aneurism or growth may possibly be made out by the fluoroscope when it can not be detected by the radiogram. This, says the author, I have never been able to prove. If the aorta is pushed by a growth laterally, this would give a shadow both on the plate and on the fluoroscope, similar to that produced by an aneurism.

From a clinical examination, in many cases, it is difficult to differentiate between an aneurism and a mediastinal growth, as few rules can be laid down. Osler states, "Scarcely a sign is shown in aneurism which may not be duplicated in mediastinal tumor." This is not strange, since the symptoms of both are largely due to pressure.

The age for aneurism is much the same as that for mediastinal disease. Pulsation of a mass always points to aneurism, but it can not be relied upon, as a growth situated over the large vessels often pulsates, and especially a sarcomatous tumor.

Post-mortem examinations of mediastinal tumors have proven this to be a fact. In the cases which I have studied, pulsation is usually less when the mass is tuberculous than when it is sarcoma or carcinoma; probably this is due to the fact that a tuberculous tumor usually grows slow and produces more infiltration and adhesions than in malignant growths. A tumor, if pulsating, has not the forcible, heaving impulse of aneur-

ism. Another point in differentiating malignant from tuberculous growths is that there are usually more calcified glands in tuberculosis. Possibly, syphiloma may produce a similar density in the bronchial glands, but the shadows are usually not quite so dense.

Tuberculin may assist in differentiating mediastinal tumors. Occasionally the diagnosis can be confirmed by the removal and examination of a supraclavicular gland.

It is usually supposed that sarcoma of the mediastinum is denser than carcinoma and also that the glandular involvement produces denser shadows. Sarcoma grows more rapidly than carcinoma and the mass is greater. This can be demonstrated by a series of radiograms taken a few weeks apart. Exceptions to this rule are rare. By percussion, mediastinal growths, as a rule, can not be made out until the tumor is of considerable size.

The esophageal pressure produces dysphagia. Tracheal involvement may produce a lateral or vertical displacement or fixation of the larynx which may be drawn to a notable low position. Difficult breathing, either inspiratory or expiratory, of the noisy type, may result from a partial stenosis. Pressure on one of the large bronchi may produce a diminution of resonance and breath sounds and fremitus over the corresponding lung. When the pulmonary veins are pressed upon, a systolic murmur may be audible in the left back, and congestion of the lungs may ensue. Pressure on the innominate or subclavian veins may produce cyanosis or edema of the head, neck, shoulders and arms, while the superficial veins of the chest may enlarge and become prominent, owing to an attempt of collateral circulation, especially if the vena cava superior is pressed upon. Fluid may accumulate in one or both pleura cavities if the vena azygos or thoracic duct is involved. Aphocia or hoarseness points to pressure on the recurrent laryngeal nerve. Larynscopic or bronchoscopic examinations may show paralysis of one of the vocal cords. Some cases of mediastinal involvement were referred by Dr. Chevalier Q. Jackson, who stated that while the patient did did not have any characteristic symptoms, there was a paralysis of one of the vocal cords and the possibility of a mediastinal growth must be considered. By the use of the bronchoscope, in some cases, it was shown that there was pressure on one bronchus and in several instances on the esophagus. Inequality of the pupils, due to pressure on the sympathetic nerve, is not uncommon, and severe pain along the distribution of the intercostals or running down the arm indicates that the spinal ganglia of bronchial plexus are pressed upon. Much rarer are symptoms of pressure on the vagus with bradycardia or tachycardia. When the phrenic nerve is involved, hiccough, unilateral spasm or paralysis of the diaphragm occurs. Pressure upon the subclavian artery changes the memometer reading of the two sides.

After a Roentgen examination of the mediastinum is made, one must not make a hasty diagnosis from the plate, as slight variations of the normal has been frequently diagnosed as a pathological condition. Several years ago, in one case the radiogram showed the arch of the aorta so prominent to the left that we made a diagnosis at first of aneurism. The only symptoms were pain and a rheumatic history. Upon a more careful investigation, we found that the patient had pleurisy with effusion on the right side ten years previous, which had undoubtedly pushed the arch of the aorta to the left, leaving it permanently in this position and giving the appearance on the plate of an aneurism.

If the operator is not familiar with the shadows cast by the normal, he should at least compare the plates under

examination with a number of normal radiograms.

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STATIC ELECTRICITY.*

By J. C. WALTON, M. D.,

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(In the *International Journal of Surgery.*)

The conclusions arrived at in this paper are based solely upon actual clinical experience with the static machine, not only in my own practice, but as an assistant to some of the prominent teachers engaged in this line of work in our metropolitan centers.

The amount of material for clinical study and observation has been considerable, probably amounting in the aggregate to thousands of cases.

With the exception of acute injuries, such as sprains, strains, contusions, subluxations, etc., the cases treated were mostly of a chronic nature.

The results of treatment in most instances were very gratifying, so much so that I could not possibly do this work without the aid of a good static machine.

While the growth in the application of electricity in the commercial world is one of the marvels of the day and a vastly interesting subject, it is its uses in medicine and surgery that especially demand our consideration.

The time has passed when a physician who uses electricity in his practice is tabooed as a charlatan and irregular for to-day the broad minded and intelligent members of our profession are beginning to realize the wonderful possibilities of a sane and rational application of this, one of our most promising therapeutic agents. It is not, however, to be expected that many of our general practitioners can devote the time and money necessary to satisfactorily do this work, but it is their duty to understand the conditions that can be benefited by electricity, so that they may refer them to men who are properly equipped for this line of treatment, for by so doing they will help their patients and the profession as well, and thus fight effectively the charlatan and the grafter and help to establish electrotherapy on a broad and scientific basis.

The electron theory of matter so ably taught by Sir Oliver Lodge and many other eminent scientists, reveals that all matter is composed of negative and positive electricity, and nothing else.

Electricity has always been considered as a form of energy, just as heat is. There is but one kind of electricity, but by means of mechanical and electrical devices it is possible for electricity to manifest itself in various ways, the difference being one of degree and not of kind.

Three forms of electricity are generally used in medicine: First, static or frictional; second, galvanic or direct; third, faradic, interrupted, or indirect.

Static electricity is electricity in a state of tension, and is produced by static or frictional machines.

Two kinds of static machines are used by electro-therapeutists, one with glass plates and one with fibre plates, each having their advocates.

I have in my offices a twenty-plate V. H. & T. B. glass plate machine (thirty-four inches in diameter); under the most favorable conditions the maximum output is three hundred m. a. I have a sixteen-plate glass machine W. & B. which will generate the same amount of current, but this is much better constructed than the other in every way. I have also a twelve-plate, fiber, high-speed Baker machine (thirty inches in diameter plates), which when running at half speed (one thousand revolutions to the minute), easily generates a current from zero to 1,000 m. a., which is the maximum current ever needed in autocondensation work. The Baker machine gives a picture of remarkable clearness and accuracy and is by far the most useful and valuable for all work.

*Read at Seventeenth Annual Meeting of Association of Surgeons of Southern Railway, Washington, D. C., June 11-12, 1912.

The differences in the electro-motive force depend upon the speed of the revolving plates; the fibre can be safely run at a speed of 2,000 revolutions to the minute, while it is not safe to run the glass plate machine exceeding 500 revolutions.

In administering static electricity you have, as in all other forms of electricity, your polarity to consider, the negative and the positive poles, the former being stimulating and sometimes irritating, the latter tonic and sedative.

The chief characteristics of the static current as compared with current electricity is the comparatively small volume, but immense pressure, the current being of a very high potential, *i. e.*, high voltage and small amperage. The amount of current is so small that 100,000 volts or more can be used on the patient with absolute safety.

The static current is uni-directional and the flow is from the positive to the negative pole. If a machine is producing a spark gap of one inch in length, the voltage is calculated at 30,000 volts. Multiply the length of the spark gap in inches and you can estimate the approximate total voltage.

Galvanic electricity may be compared to the water in a wide river, faradic to the water from a nozzle, and the static to escaping steam (Dugan).

The static machine was invented in 1667 by Otto von Gueriche, of Germany. This apparatus laid the foundation for the influence machine now in vogue. In 1734 Abbe Nollet drew the first spark from the human body. Prior to 1880 the static machines had very little therapeutic value, for they were frictional machines. The only methods of treatment by this apparatus were the spray, the bath, the spark and the Leyden jar. In 1880 Prof. W. J. Morton, of New York, brought to this country a new form of machine known as an influence machine, and this is the form now used by physicians.

To Dr. Morton we are indebted for the static induced current, which is the first high frequency current ever used—the Morton wave current. In fact, Dr. Morton is regarded as the Edison of the medical world. The currents known as the d'Arsonval, the Teszla, the Oudin and wireless, are all modifications of Morton's induced current.

Lack of time will allow mention of only a very few of the many indications for the use of static electricity.

The X-ray—As a diagnostic aid, especially in fractures, dislocations, in diseases of the bones and joints, and also for keeping an accurate and legal record of accident cases, the skiagraph is an indispensable ally to the modern surgeon. This phase of the subject is so obvious to all present that it would be a matter of supererogation to discuss it before this body of representative surgeons. I would rather urge on you a more general and routine use of the ray in your work as an aid in differential diagnosis.

In the long distant past when the use of the ray was in its infancy, the speaker was familiar—to some extent a particeps criminis—with three cases of chronic sciatica, in all of which the symptoms did not differ in any material way from the usual classical signs and there were no reasons to suspect malignancy. Yet later developments showed one of the cases to be due to cancer of the lower bowel, and this patient never showed any bowel symptoms until later in the disease. The other two cases of supposed sciatica were found to have sarcomatous disease of the shaft of the femur, fracture occurring later when the ray showed malignancy.

These patients were referred for treatment of sciatica to some of the best men in the country, and as nothing pointed to malignancy, it is needless to say that the early use of the ray in the last two cases would have saved us all very serious embarrassment. The lesson they

teach is to avoid carelessness and routinism, to make a careful examination in all cases, and when in doubt resort to the ray.

The laws of Virginia allow the presiding judge to appoint his own experts in insanity cases and those of so-called brain storms, etc. The decisions of this board of medico-legal experts are accepted as final and as the last word in these cases. If this custom were universal in all the States we might be spared the humiliation of seeing so-called medical experts testifying pro and con in the interests of the respective sides upon which they are employed. As the x-ray is often manipulated for fraudulent purposes by unprincipled scoundrels, it is of vital importance that its employment should be restricted to honest and capable operators. These swindlers will often substitute the plates taken from another case, and they have been known, when compelled to refer the case to another operator, to inject with a long needle down to the bone iodoform and glycerine in the line of the supposed fracture. This fraud can be easily detected by taking another picture at right angles to the alleged fracture, when it can be easily lifted off the bone.

However important X-ray diagnosis may be, its therapeutic use is equally so. It can be employed to sterilize and stimulate infected and septic wounds. In malignant cases it should be used both before and after operation to prevent recurrences and to limit the operative field by destroying any outlying foci of the disease, excepting only in rapidly developing cases of malignancy, and here it should be thoroughly applied after operation to prevent recurrences.

The ray will frequently cure superficial and skin cancers with a minimum of scarring or disfigurement, and it also has proven useful in sarcomatous conditions.

In tuberculosis of the spine, joints, bones and glands it is considered by so eminent an authority as John B. Murphy to be superior to all other agents.

TREATMENT OF HYPERIDROSIS BY RADIOTHERAPY.

Since the observation, in 1903, by Dr. W. A. Pusey, that sweating of the axilla could be definitely ameliorated by exposure to X-rays, much has been done by other workers in this field confirmatory of the early results of treatment of localized hyperidrosis by this means. In the following year Dr. J. Belot, of St. Louis, formulated the dosage of the rays as 4H, in order to give the best effects, and at that time it was considered that this was a sufficient dose, and this dose is still productive of the best results. Dr. Belot states (*Bull. et Mém. de la Soc. de Radiologie méd. de Paris,* June, 1912) that hyperidrosis only exists in a state of latency, ready to be provoked by various emotional and other influences. The glandular elements of the skin are so sensitive to the action of the rays that they may undergo more or less atrophy without any change taking place in the structure of the skin itself. Axillary sweating seems to be particularly amenable to radiotherapy, and many medical men who have suffered from this troublesome affection have obtained complete relief after one or two exposures. Generally speaking, treatment must be directed towards the general nervous system at the same time, any deviation from the normal receiving proper attention. As regards the technique, it is of the highest importance to divide the dose equally over the whole of the affected area. If the palm of the hand is being treated, the patient is seated comfortably and the hand is allowed to rest, palm uppermost, upon a firm, non-collapsible base, and the hand is fixed securely by a strong linen band applied over the fingers with a weight attached to each end. The distance from the tube should be 35 cm., and this must be calculated from the top of the thenar eminence. The usual dose is 4H units, with a 3 to 5/10 mm., aluminum filter. From 18 to 20 days after-

wards a second exposure is given of 3H. Plantar hyperidrosis is apt to be more rebellious than sweating of other regions. If six or eight exposures do not bring about a considerable improvement, Dr. Belot advises cessation of the treatment and a trial of formal or chromic acid. In short, axillary and inguinal hyperidrosis are the most easily influenced by this mode of treatment, that of the feet being less so. A rigorous technique is the best preventive of accidents.

X-RAY IN SKIN DISEASES.

Russell H. Boggs, in the *Medical Era*, reminds us that the therapeutic application of the rays, the principle is to produce a sufficient effect for the purpose of the case, without going beyond the bounds of safety. In all skin diseases, except epithelioma and lupus (where the condition may warrant some risk), the operator should always keep the effect below the point of active radiation. Inexperience and lack of judgment account for some of the undesirable results.

The following are some of the changes which take place in living tissue when radiated:

1. Temporary or permanent atrophy of the appendages of the skin. This explains why the rays are indicated where it is necessary to remove the hair either permanently, as in hypertrichosis, or temporarily as in sycosis, favus, tinea tonsourans, etc. The amount of radiation determines whether a temporary or permanent alopecia is produced. The rays have been found exceedingly useful in producing a slight atrophy or diminution in size or functional activity of the sebaceous glands in acne, acne rosacea and seborrhea, and to decrease the activity of the sweat glands in hyperidrosis.

2. Destructive action upon organisms in living tissue as in lupus vulgaris, etc. As the X-rays are not bactericidal the effect is most likely produced by destroying tissue of less resistance, and thus rendering the soil barren. Other bacterial diseases, such as sycosis and the different forms of tinea and favus are cured undoubtedly by temporary epilation.

3. Increase in metabolism accounts for some of the results in chronic indurated eczema, lichen planus, psoriasis or any other indurated inflammatory skin disease, where stimulation will canse absorption of the inflammatory products.

4. It is well known that when the rays are used intensely the diseased cells are destroyed long before the healthy, and that cellular tissues are most influenced by the rays. This explains the results of radiation in epithelioma, sarcoma, tuberculosis of the skin, mycoides, etc.

5. The anodyne effect of the Roentgen rays has been well demonstrated in the treatment of painful malignant diseases, in neuralgias and in itching dermatoses, such as pruritus, eczema and prurigo.

6. The action of the X-ray on keloid inhibits the degenerative cell development, stimulates normal processes and promotes absorption. It is not only unnecessary but unwise to ray keloid intensely like malignant diseases. It is possible to convert keloid permanently into a flexible white scar by the X-ray. My experience covers a number of hypertrophic scars and four cases of genuine keloid.

The above physiological actions indicate rather a wide field of utility of the rays in dermatology. Time and experience has shown the method extremely valuable when employed judiciously and not in a slight, enthusiastic manner.

As the wave of enthusiasm of a few years ago is past, no conservative physician would subject himself to criticism by applying this method in cases which are successfully treated by other agents more easily applied. However, we still have a few ultra-radicals and a few ultra-conservatives, but yearly each class is growing smaller.

Undoubtedly the ones who make a careful and extensive study of the Roentgen rays in dermatology, have been censured for treating everything with the X-ray, when they did, in fact, nothing of the sort.

To so treat every disease that can be cured by the X-ray is poor judgment. On the other hand, refusal to apply this method in a class of cases where time and experience have demonstrated it to be the most efficient, would show that the physician is either prejudiced or else unfamiliar with the results obtainable.

Pustular acne is a good illustration. Many patients suffering from pustular acne, are cured more quickly by the proper application of the X-ray than by other methods.

Many competent dermatologists have persistently failed to cure cases of acne which later have been speedily relieved by X-radiation. On the other hand, the X-ray has been brought into disrepute by careless use, by operators who applied this method of treatment for a few papules, which could have been cured by rectification of some systemic derangement.

When anyone states that the X-ray should be used in every case of acne, it shows his medical training is deficient. When anyone states that the rays are not the most efficient agent we have at the present time, in certain selected cases of acne, his patients are not receiving the best possible treatment.

The results in the treatment of skin diseases depend entirely upon the proper selection of cases and the technic used, and the results can be divided into two classes:

(1) Where the method is employed by those who are masters of the technique. Full physiological doses are empleyed and success follows.

(2) Where the method is employed by men skilled in other branches but uncertain and timid in their X-ray technique. Effective doses are given only by accident.

All known measures that are good for the patient should always be used. In the treatment of many skin affections so much can be done by adjuvant measures, that the physician should not rely wholly upon the ray. The same changes of medication, for the different stages are called for as when the rays are not employed, if we are to expect the best results.

In a short paper it is difficult to classify all skin diseases and give all indications and contraindications. Time will not permit taking up every disease that has been treated by the X-ray.

To designate those cases in which one may confidently expect a good result in a reasonably short time, I have divided skin lesions to be treated by X-radiation into three classes.

(1) Cases which are most efficiently treated by X-radiation:

(1) Superficial epithelioma.
(2) Chronic pustular acne.
(3) Indurated acne.
(4) Chronic eczema.
(5) Stubborn psoriasis.
(6) Lupus vulgaris. (X-ray or Finsen light.)
(7) Favus.
(8) Keloid.
(9) Sarcoma.
(10) Rhinoscleroma.
(11) Paget's disease.
(12) Atinomycosis.

(2) Cases in which other measures should be first exhausted:

(1) Tinea trichopytina.
(2) Sycosis vulgaris.
(3) Pruritus.
(4) Psoriasis.
(5) Hyperidrosis.
(6) Alopecia ureata.
(7) Lichen planus.

(3) Cases in which there is no recognized treatment and where the X-rays have been successful in occasional cases:

(1) Lupus erythematosus.
(2) Nevus.
(3) Hypertrichosis.

(4) Leprosy.

(5) Mycosis fungoides.

(6) Blastomycosis.

(7) Prurigo.

To recapitulate:

(1) Radiation is an important—even an essential adjunct in dermatology.

(2) Success depends upon:

(1) A wise selection of cases.

(2) Efficient mechanical equipment.

(3) Correct technique based on the skill born of experience.

(4) Broad knowledge of the understanding of the physiological effects of radiation.

(5) Intelligent use of all established adjuvants.

(3) Undue enthusiasm either for or against the ray must ultimately yield to careful clinical results.

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INFECTED WOUNDS TESTED ELECTRICALLY.

F. S. Lewis, in *Northwest Medicine,* reports some cases of infected wounds treated electrically which open a new field of usefulness for this marvelous agent.

Case 1—H. C., age 19, male, bitten by a tame coon, a single tooth penetrating the flesh over the styloid process of the ulna. Three days later he called at my office with a painful swelling extending about 1½ inches in every direction around the bite, which had apparently healed over. Red lines ran up the arm to the elbow, which felt stiff; there was tenderness of the glands and stiffness of right shoulder. I applied a small cotton-covered electrode, wet with sat. sol. iodide of potassium, attached to negative pole of a 36-cell galvanic battery, continuous current, with a positive pole applied near the shoulder by means of a sponge armlet. Current was applied slowly till 15 milliamperes was reached, continuing after that about 15 minutes. The hand was wrapped during the night with a bath towel, wet with cold salt solution. On the following morning a depression of 1½ inches in diameter appeared in the center of the swelling, the red lines were paler and there was less stiffness of the elbow and shoulder. Thus encouraged, I continued making two applications daily till all parts of the swelling had been reduced. On the fifth day patient returned to his home entirely restored.

Case 2—Mrs. S. cut left thumb in flexure of first joint while cutting soap for washing; bound it with a cloth and continued washing clothes after a case of confinement occurring several days before. Twenty-four hours later was taken with severe pain in thumb, running to elbow, followed by much swelling, also chills and fever. I began application of iodide of potash sat. sol. on negative electrode of 36-cell galvanic battery, with positive on back by means of a 6-inch pad, wet and well soaped. Fifteen to twenty mma. of current was the strength used for 15 to 20 minutes in a place, over different parts of the swelling, the sittings lasting from 45 to 60 minutes. No other treatment except keeping the hand wrapped in wet, cold towels was used. The swelling and all bad symptoms rapidly ceased, the red lines disappearing after the second day of treatment. After a little over two weeks patient was able to resume work.

Case 3—J. L., age 18, cut in flexure of second joint, middle finger, right hand. Continued working. Was taken next day with pain and swelling involving the knuckle. Two red lines about an inch apart extended nearly to the elbow. There was some stiffness of both elbow and shoulder joints. Placed wet sponge electrode on positive pole around arm above elbow, small cotton-covered electrode, wet with sat. sol. iodide of

potassium, directly on cut. Same battery as above. Moved rheostat till 15 mma. of current was reached. In 15 minutes the red lines began to fade; in 30 minutes they had entirely disappeared. One more treatment 24 hours later and case recovered without further attention.

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X-RAYS IN RECTAL DIAGNOSIS.

J. R. Pennington states that while the rectum is easily inspected by various specula, and sigmoid is less readily accessible by the use of sigmoidoscopes, such as the one with insufflation devised by him, the colon is inaccessible and its exact position difficult to ascertain. Very often it is also difficult to determine and locate pathologic conditions in the large intestines.

Until recently, the means of diagnosis have been limited to those used in other portions of the alimentary canal, viz: Inspection after dilatation of the bowel with air or water, palpation, percussion and trans-illumination. All of these are open to the objection that they are uncertain.

The writer observed in the latter part of 1899 that by introducing some agent into the large bowel which would cast a shadow, the X-ray may become useful in making a diagnosis of conditions in the twin cavities. It is only recently, however, that such procedures have become of practical value.

A bismuth meal is useful in diseases of the stomach or duodenum, the agent being suspended in milk, acacia water, thick soup or some similar vehicle.

But for the large bowel, the action of bismuth per os is very slow. One author estimates that it requires from 12 to 15 hours for the bismuth mixture to reach the ileo-cecal valve; about 24 hours to gain the transverse colon, and 36 hours to penetrate to the sigmoid. By the method advocated this is done, so to speak, instantaneously.

Coming now to the technic: The patient's bowels are first cleansed by means of laxatives and injections. He is then placed in the knee-shoulder position, and from 25 to 30 ounces of the mixture used for casting the shadow injected into the large intestine. For this purpose the author uses an ordinary irrigator and a short rectal tip. A long rectal or colonic tube for administering the injection is unnecessary. After the suspension is injected, the patient lies on his right side for a few moments, so part of the menstrum may pass into the cecum. He is then placed in either dorsal or ventral position on the radio-graphic table and the picture taken.

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ULTRA-VIOLET LIGHT IN ALOPECIA.

Of the many methods employed to produce the hyperemia of the scalp necessary for the cure of an alopecia that by the ultra-violet light is one of the most cleanly and convenient. A series of cases have been treated by Dr. L. Delpratt Harris, of the Royal Devon and Exeter Hospital, England, (*Lancet,* July 6th, 1912) after the method recommended by Kromayer. The light was obtained from iron electrodes between which sparks were discharging from an oil condenser attached to a 19-inch coil worked by 24-volt accumulator batteries giving 5 to 7 amperes in the primary coil. Half an hour's exposure was generally given, the skin being separated from the quartz compressor by solid ice blocks cut in squares of suitable size, about three-quarters of an inch thick. A good deal of hyperemia resulted, which lasted for a week. A second administration was not given until this had passed away. Any marked reaction was, of course, allowed to subside before continuing the treatment. In some of the cases stimulating lotions were used at the same time, more in the nature of a placebo than anything else.

THERAPEUTIC BRIEFS.

Ichthyosis Hystrix.—

Acidi salicylici 3ss
Ext. cannabis ind.....grn. x
Collodii .....f. ℥j

M. Sig.: Paint the surface twice daily.

Coryza.—

Pulv. ipecacuanhæ et opii.....grn. xxiv
Quininæ bisulphatis .....grn. xxiv
Strontii salicylatis .....grn. xxiv

M. Ft. caps. No. xij.

Sig.: One capsule every two hours.

Rhinitis.—

Camphoræ .....grn. xij
Ext. belladonnæ.....grn. iij
Quininæ bisulphatis.....grn. xxiv

M. Ft. caps. No. xij.

Sig: One capsule every three hours.

Infantile Eczema.—

Anthrasol .....gtt. xxv
Adipis lanæ.....75 gm.
Amyl .....ad. 100 gm.
Zinci oxidi .....ad. 100 gm.

M. f. ung.

Mumps.—

Ichthyolis .....grn. xlv
Plumbi iodidi.....grn. xlv
Ammonii chloridi.....grn. xxx
Adipis .....℥j

M. Sig.: Apply twice a day.

Amenorrhea.—

Aloini .....gr. xv
Ferri reducti.....3ss
Strychninæ sulphatis.....grn. j

M. Ft. pil. No. xxx.

Sig.: One pill after each meal.

Gastritis Acute.—

Olei ricini.....f. ℥vj
Tr. quillajæ.....gtt. v.
Mucilaginis acaciæ.....℥j
Olei menthæ piperitæ.....gtt. ij

M. F. Emulsum.

Sig.: Take at once.

Septic Gingivitis.—

Acidi salicylici..... 1 gm.
Acidi benzoici..... 1 gm.
Tr. krameriæ..... 6 gm.
Alcoholis .....30 gm.

M. Sig.: A teaspoonful in a wineglassful of water as a mouth wash.

Chorea.—

Ammonii bromidi .....℥vj
Tr. belladonnæ .....f. ℥iij
Tr. cimifugæ .....f. ℥jss
Aquæ .....f. ℥jss
Syrupi .....ad. f. ℥vj

M. Sig.: Two teaspoonfuls four times a day.

Dermatitis Venenata.—

Plumbi acetatis .....℥iv
Tr. opii.....f. ℥iv
Aquæ .....ad. f. ℥iv

M. Sig.: Dilute with three volumes of water and apply to affected parts on lint.

Epididymitis.—

For the subacute stage:

Ung. hydrargyri.....℥ij
Ung. belladonnæ.....℥ij
Ung. iodi.....℥ij
Petrolati .....℥ij

M. F. Ungt.

Sig.: Apply to scrotum on lint.

Gonorrhea.—

Olei santali .....mv
Olei terebinthinæ .....mij
Olei cinnamomi .....mss
Formini .....grn. ijss

Dispense 30 such doses in capsules.

Sig.: One capsule every three to six hours.

Fever.—

Morphinæ acetatis.....grn. j
Sacchar. alb. .....℥ij
Spt. æeheris nitr.....f. ℥ij
Liq. ammonii acet.....f. ℥iv
Aquæ camphoræ .....ad. f. ℥viij

Sig.: One tablespoonful every two or three hours.

Bronchitis.—

Thymolis .....grn. xv
Eucalyptolis .....mxx
Creosoti (beechwood).....℥ij
Olei pini sylvestris.....℥iv
Methylis salicylatis.....℥j

M. Sig.: Inhale five drops three times daily. Put into a small cup, and while being warmed over a spirit lamp, inhale the vapor.

BOOK REVIEWS.

A TEXT-BOOK OF GYNECOLOGY. — By William Sisson Gardner, M. D., Professor of Gynecology, College of Physicians and Surgeons, Baltimore, Md. With One Hundred and Thirty-eight Illustrations in Text. New York and London: D. Appleton and Company. 1912.

There does not seem to be much excuse for the writing and publishing of a book like this, except, perhaps, the desire of the author to have in bound form his own scheme of teaching for use in his college classes. Certainly for the general practitioner the book has no value over the many works on gynecology already in the market, and falls far behind many of these existing text-books. There is altogether too much disposition among teachers of the various branches of medicine to rush into print. We presume that everything contained in this volume is accurate, but it is hard to see what purpose can be served by so fragmentary a presentation of the subject, except, as stated, as the basis for a teacher who desires an outline upon which to elaborate with his students.

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SEXUAL IMPOTENCE. — By Victor G. Vecki, M. D., Consulting Genito-Urinary Surgeon to the Mount Sinai Hospital, San Francisco. Fourth Edition, Enlarged. Philadelphia and London: W. B. Saunders Company. 1912.

This book is in reality more than a mere treatment of the subject of sexual impotence. It deals with the entire sexual life, from the physiological and psychical point of view. Personally we are of opinion that the entire subject of the sexual relations of life, in all of their aspects, is done to death. But we presume it is necessary for the physician to have a proper understanding of the matter, and for this purpose Dr. Vecki's book is as good as, and possibly a little better, than some others. At all events, Vecki spares us a good deal of fulsome detail that enters into a great many of such works, for which we are truly grateful. We could wish he had been a little more dignified in his style, instead of using such language as, "the man's wife told me there was nothing doing." We suppose, however, that a man can not help his style, and, seeing that the book has passed into a fourth edition within ten years, it would seem that it finds a response somewhere or other to justify it.

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MICROBES AND TOXINS.—By Dr. Etienne Burnet, of the Pasteur Institute of France. With a Preface by Elie Metchnikoff. Translated from the French by Dr. Charles Broquet and W. M. Scott, M. D. Illustrated. New York and London: G. P. Putnam's Sons. 1912. Price, $2.00 net.

This book is, in effect, a presentation of the views and teachings of Elie Metchnikoff, which is not intended as a reflection upon its originality, but a compliment upon its subject-matter. Metchnikoff is one of those rare scientists who gives to the world, in untechnical language, intelligible even to the lay mind, the results of his researches with a naivete and a large simplicity which is part of the Russian character. In this book, however, we find some of the aspects of his work which more closely concern the medical scientist. It deals with some of the chief problems of bacteriology and immunity. The chapters on the laboratory methods of diagnosis, the vaccines, the sera, and the new drugs which are the first fruits of scientific chemical therapeutics, show the enormous debt which medical treatment owes to modern biological science. It is a book to delight and instruct the

physician who is interested in the broader phases of his science.

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MATERIA MEDICA AND THERAPEUTICS.—Including Pharmacy and Pharmacology. By Reynolds Webb Wilcox, M. A., M. D., LL. D., Late Professor of Medicine, New York Post-Graduate Medical School and Hospital; Consulting Physician to St. Mark's and the Nassau Hospitals. Eighth Edition, Revised. With Index of Symptoms and Diseases. Philadelphia: P. Blakiston's Son and Company. 1912. Price, $3.00.

There is nothing particularly original about this work, but it represents a careful, well-arranged compilation of the essentials of materia medica and therapeutics based upon the Pharmacopœia and such other sources of information as are generally accepted by the medical profession. Perhaps its most distinctive feature is the carefully prepared index of diseases and disease symptoms, which makes it easy to refer to the therapeutic data of the book from the clinical standpoint—and that is, after all, the way in which the practitioner most often requires to use the book. It is a feature which other works on materia medica and therapeutics would do well to imitate.

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VACCINE THERAPY IN GENERAL PRACTICE.—By G. H. Sherman, M. D., Editor of *The Bacterial Therapist.* Chicago: Successful Medicine, Inc., City Hall Square Building.

As a general proposition, it may be said that natural recovery from infectious disease takes place only in virtue of the acquisition of an immunity to the infecting agents, and with but few exceptions all medical treatment simply aims to promote this end. One of the modes of treatment which aims most directly at this purpose is that of vaccine therapy. Playing, therefore, as it does, so vital and fundamental a rôle in the cure of disease, the practicing physician ought to know all about its nature and modus operandi, as well as its practical methods of administration. But it is a thing of comparatively modern investigation, since most of us went into practice, and on this account many physicians are neglecting to avail themselves of this modern, scientific phase of therapeutics, and failing to use the vaccines as a routine of treatment. Dr. Sherman's little book bridges over this gap between the ideal and the practical, and puts within the reach of every practitioner a practical working knowledge of vaccines such as will increase the business and the success of those who avail themselves of it. It is not an exhaustive treatise on the theories of immunity, darkening counsel with vain words, as technical treatises so often do, but a concise working-manual, containing the quintessence of the subject, designed, as its name implies, and admirably adapted, as a guide to the useful application of vaccine therapy to the daily work of the busy practitioner.

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THE INSTABILITY OF SCOPOLAMINE SOLUTIONS.

It is found, writes H. Langer, in the *Apotheker Zeitung,* that even when sterilized and kept in sterile vessels, scopolamine solutions do not retain their physiological activity undiminished. In five months only about one-third of the original active strength remains, and in nine months, one seventeenth. These experiments were made with very dilute solutions, but they indicate that only freshly prepared solutions should be used in medicines.

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CHLOROSIS.

Ferri lactatis	grn. xxiv
Cinchonin. sulphatis	grn. xxiv
Extr. hyoscyami	grn. v
Arseni trioxidi	grn. 4/5
Strychninæ sulphatis	grn. 2/5

M. F. tabl. No. xxiv.

Sig.: One tablet three times a day.

NOTES AND MISCELLANY.

TYPHOID FEVER.

IN A LARGE majority of cases of typhoid fever there is undoubtedly an intestinal lesion, but other organs are also affected. In a few cases post-mortem examination reveals no lesion whatsoever in the alimentary tract. Typhoid fever differs from some of the infectious diseases in that, during its course, the entire body is exposed to a specific bacillus and that the lesions are, therefore, really several-fold. Many physicians do not admit this fact and speak of and treat enteric fever as if it were an infection confined to the intestinal canal. In typhoid fever, on the other hand, the patient may be seriously sick with a non-enteric typhoid and yet have an intestine totally free from the typhoid bacilli and from any of the intestinal lesions of the disease. The report from pathologists show that many cases are now on record in which typhoid fever was present and in which no intestinal lesion was found. If the disease is an infection involving various organs of the economy, the treatment which only has in view the lesions found in the intestinal canal will be inadequate to meet successfully the patient's condition; consequently, a close and careful study should be made of any suggestive cause.

In the treatment of typhoid fever, the patient should be in an aseptic, well-ventilated, light and cheerful room. He should have water at stated intervals. It is a great mistake to neglect this, as when a patient is unconscious he should have water and, of course, does not then ask for it.

The medical treatment of enteric fever is largely symptomatic, the patient suffering from the infection produced by the typhoid bacillus. The body is necessarily affected by splenic toxemia; the intestinal glands and other organs are involved. Prominent among the latter symptoms are emaciation and mal-nutrition, and this should be combated by a food which will not overtax the digestive system, and will at the same time supply every element of nutrition. Bovinine is ideally indicated as a food. From the onset, antiseptics are indicated and should be administered more or less throughout the entire course of the disease; but, most of all, keep the patient's temperature down by sponge baths, and the strength and nutrition as near normal as possible.

AN OPEN LETTER TO THE EDITOR OF THE ILLINOIS MEDICAL JOURNAL.

St. Louis, Mo., Sept. 14, 1912.

To the Editor *Illinois Medical Journal:*

Permit me to sympathize with your readers. I feel sorry for anyone who is obligated to read your editorials, which, couched in good English, contain a mass of misinformation. For example, in your September (1912) issue, on page 386, is a remarkable production entitled: "The New St. Louis Medical Colleges."

I will not take time to correct all of the misstatements contained therein, but will say that your confusing, confounding and admixing of the American Medical College, the National Medical University and the Hippocratean College passeth understanding.

Evidently you do not know that the National Medical University is located in the City of Chicago, and was placed, by the Illinois State Board of Health, on the list of discredited schools in April, 1909.

Possibly you do not know that the American Medical College of St. Louis was reorganized in June, 1910, since which time it has been conducted as a *regular* medical school, with an able faculty, with well-equipped laboratories, conducted by salaried teachers, and with ample clinical facilities. Possibly you do not know that the American Medical College is accredited by the various State boards of health.

In view of the fact that our catalogues have been sent to you from time to time, it seems strange that you have not known these facts.

For your further enlightenment, I will say that the American Medical College is the medical department of the National University of Arts and Sciences, that said university is located on Garrison and Lawton Avenues, in the City of St. Louis, Mo., occupying the large buildings formerly held by Barnes University.

Some fine day—let us hope it may be soon—when you are at peace with yourself and with the rest of the world, when you feel symptoms of the milk of human kindness welling up in your soul —come and see us. We have nothing to conceal.

The records, matriculation books, laboratories, hospitals, etc., of the American Medical College (medical department of National University of Arts and Sciences) will be thrown open for your inspection.

Very truly yours,

JAMES MOORES BALL,
Dean American Medical College.

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CONGESTION AND SEPSIS.

Congestion of all organs, especially the stomach and kidneys, always accompanies a septic condition; hence, it is apparent that a drug introduced into this already abnormal area must be absolutely non-irritative, freely soluble in the gastric fluids, quickly and easily absorbed by the blood and tissues, and finally eliminated without irritation to the already overacting kidneys. Burnham's Soluble Iodine so completely meets these indications that its effects are always accomplished with gratifying dispatch and uniformity.

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Ten full plates, 12x9, illustrating and briefly describing the following obstetrical positions:

1. Diameters of fetal head, pelvic brim and planes of pelvis.
2. Head presentations.
3. Mechanism in vertex presentations.
4. Mechanism in left occipito-anterior presentation.
5. Face presentations.
6. Mechanism in face presentations.
7. Right mento-posterior position.
8. Breech presentations.
9. Mechanism in breech presentations.
10. Transverse positions.

These plates will be sent in book form to any address on receipt of 25 cents, postpaid. Battle & Company, St. Louis, Mo.

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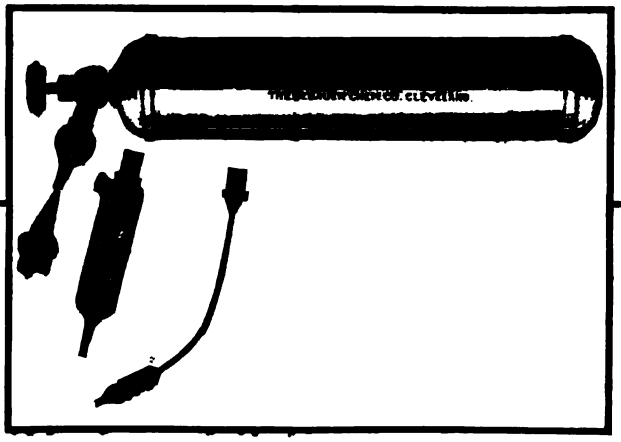
CONVALESCENT CHILDREN.

In children convalescing from acute infectious diseases, whooping cough, bronchitis and similar affections, Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is always indicated; nor is it necessary to dwell upon the fact that in scrofulosis, rickets and other diseases of malnutrition, there is nothing better than Cord. Ext. Ol. Morrhuæ Comp. (Hagee), and it has always been relied upon in tuberculosis. On account of its palatability, patients will take it in quantities and long enough to secure results.



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GEBAUER

Proving most satisfactory in its improved form of administration, insuring potency and efficiency in a superlative degree. A method of administration that has the unqualified endorsement of hospitals, clinics, and emergency depots as well as private practices, the country over.

A Word With You, Doctor

Have you investigated the Gebauer method of administering Ethyl Chloride, C.P.?

This invaluable local anaesthetic, that you have known as susceptible to chemical change, due to light and leakage, is now put up in an hermetically sealed metallic tube that insures absolute protection of contents, and perfect stability. In its new dress it is used exclusively in most of the big hospitals and clinics. It has the unqualified endorsement of the entire profession because of its purity, its accessibility—and its dependability when needed for emergency purposes.

By the improved method of the Gebauer Chemical Co., of Cleveland, Ohio, a most perfect article of Ethyl Chloride, C.P., is administered from its metal container tube, fitted with spray attachment and equipped with a straight or flexible nozzle, and with no more preparation for use than holding the tube in your warm hand and releasing the fluid. The warmth of the hand produces an exceedingly fine spray which can be checked instantaneously at will. Sunlight cannot reach or affect the anesthetic so protected, and the breakage and loss, at an inopportune time, so common with the old-time glass container, are eliminated entirely.

The mechanical construction of this little device prevents clogging, and the tube may be refilled over and over again, at nominal cost.

Ethyl Chloride, C.P., has been "harnessed," and the accomplishment of the operation has given the physician one of the most potent and most perfect agents for the alienation of pain in minor surgical cases that the medical or dental professions have ever known.

One of these "Gebauer" tubes in your armamentarium will relieve an embarrassing situation when the inevitable emergency arises. Why not put one there!

Sent Anywhere Upon Receipt of Price; Safe Delivery Guaranteed.

40 grm tube with ordinary spraying nozzle,	$1.00	Flexible spraying nozzle alone - -	.50
100 c.c. " " " " "	1.66	Graduated dropper - - - -	.50

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A NEW MANAGER.

The Denver Chemical Manufacturing Co., manufacturers of Antiphlogistine, are to be congratulated on securing the services of Mr. Harold B. Scott as manager of the company, to succeed J. C. Bradley, who is retiring from that position.

Mr. Scott is a bright, energetic young man, a graduate of Yale University with the degree of A. B. Upon his graduation from college he entered the commercial world, where he has enjoyed a wide, varied and successful experience in developing one of the great industries of our country. He is peculiarly well fitted for the management of a proprietary house, and his connection with Antiphlogistine will doubtless lead The Denver Chemical Manufacturing Co. to spell success with larger letters than ever before.

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Treatment is not a stimulant, but a food, and repairs nerve tissue as the stimulant is withdrawn. The drug is withdrawn gradually, without distress to the patient.

Ordinary cases are cured in two or three weeks, and one treatment is sufficient in recent cases.

DIRECTIONS—Vials A and B in alternation, one dose of six pellets every two hours; the period between doses to be lengthened to every four hours, and then to twice a day, as the cure progresses. The amount of morphine or opium used to be lessened each day, as the patient can without distress, but always less. Treatment to be stopped at once as soon as the habit is broken. Occasional doses can be used for a time, if there is any return of desire.

Treatment, in two 3-dram vials, $2.00 net. No sample or trial treatments.

ENSIGN REMEDIES COMPANY
DEPT. H BATTLE CREEK, MICH.

The Medical Brief

A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., November, 1912. No. 11.

EDITORIALS.

THE INTERNATIONAL CONGRESS OF HYGIENE.

THE International Congress of Hygiene, recently held in Washington, D. C., was a wonderful event in the history of medicine; or, perhaps we should rather say, a notable milestone in the progress of medical science. To those who attended it, and heard the various papers and discussions, and saw the numerous exhibits, it was a revelation. It is both instructive and inspiring to assemble together once in a while, the sum of all the work that is being done and advances that are being made in this kind of movement, and view them in their collective size and strength. Personally, we had no idea that such colossal strides had been made during the past few years in the direction of preventive medicine, until this world congress of men and things directly engaged in the movement displayed it to our bewildered eyes in all of its glory and power.

Progress was most marked, naturally, in the department of infectious diseases, where the work of the research man and the field hygienist has been chiefly concentrated during the period in question. Judging from the reports in this section, it really would seem that we have got micro-organic infection on the run, and it ought not to be a very great while before that happy time shall arrive of which Pasteur gave us the foreshadowing in his famous assertion that it is possible to make every germ disease disappear from the face of the earth. Medical and hygienic science are now attacking these diseases in both essential directions. First, it is attacking the germs in their habitats and in their channels of communication. It is tracking these pathogenic organisms to their lairs, and carrying the fight into the very sources of their generation and multiplication. It is following up the ways and agencies by which they find their way into the human system, and is effectively blocking their path. And, finally, recognizing the fallibility of these other methods, it is preparing the human body for possible invasion by an artificial immunizing of the system against the toxines of the various germs—artificial only in the sense that it deliberately invokes the natural defenses of the body and arbitrarily sets them in operation. So with these enemies of human life, as with the enemies of ancient Israel, it is a case of "him that escapeth the sword of Jehu shall Elisha slay." When all three modes of attack and defense are reasonably perfected, there will be but little chance of serious injury from pathogenic organisms.

Next in importance and interest is the work that is being done for the preservation of infant life, especially in regard to the infantile intestinal diseases which are responsible for such wholesale slaughter of the innocents. For this work the bulk of the credit must be given to the Italian school of pediatrists and laboratory men, who have almost revolutionized our conception of the child's intestinal tract and the diseases which attack it. The gist of the results of this work will be found, in boiled-

down form, in an article in this issue of our own journal, from the pen of Dr. E. L. Cooley, who visited the schools of Italy and France and Germany last year, and has set down for the benefit of our readers what he learned there. According to their latest researches and observations, we must no longer regard the extraneous infection of the milk as the prime responsible element in the production of infantile diarrheas and dysenteries, but must look for the determining cause in the inherent bacterial content of the bowel itself, whose flora are susceptible of change with mere change of diet, and under the influence of such alteration in diet become agents of infection themselvees, or lose their bactericidal power, and so the bowel falls an easy prey to extraneous germs which would otherwise be harmless.

But time and space would fail us to speak of one-tenth of the new and wonderful things that have come to light in the past few years and are displayed to our wondering gaze in the records and exhibits of this International Congress. Perhaps the greatest and most striking significance of the whole affair is the emphasis which it lays upon the truth, so often proclaimed in these pages, that the real future medical science lies in preventive medicine. Ultimately we shall not conquer disease by therapeutics, but by prophylaxis; not by curing it but by heading it off. And hardly second in importance is the splendid note of encouragement that it sounds to us who are fighting, each in his own little corner of the field, and often feeling skeptical and disheartened about the eventual outcome of the battle. To us it is a trumpet call to renewed effort; it gives us a fresh hold and a new faith. It is a concrete, practical paraphrase of Arthur Hugh Clough's prophetic message:

Say not the struggle naught availeth,
The labor and the toil are vain,
The enemy faints not nor faileth,
And as things have been they remain.

For while the tired wave, vainly breaking,
Seems here no painful inch to gain,
Far out, each creek and inlet making,
Comes silent, flooding in, the main!

WANTED: A MODERN SYSTEM OF THERAPEUTICS.

IN THE preceding editorial, we have voiced our opinion that the real and ultimate future of medical science lies in preventive medicine. But we must not be understood by that to mean that therapeutics is, or ought to be, a dead letter. To speak of the time when preventive medicine will have banished sickness from the earth and men shall all die of the natural processes of old age is like talking about the time when all the coal shall have been used up and people shall derive their heat from direct utilization of the sun's rays—both periods are far beyond the life-cycle of this, and probably of many succeeding generations. And not only is this true, but it is also true that the work of the therapeutist in curing and alleviating disease will unquestionably play an important part in bringing about the final achievement of preventive medicine. So that it is quite consistent, in every way with our views upon preventive medicine's ultimate triumph, to insist, now and all the time, upon the most scientific and efficient system of therapeutics that can be evolved.

Of all the departments of medical science in which advancement has taken place during the past twenty-five or fifty years, we regret to say that therapeutics show the least progress. Indeed, if we depended for our judgment upon the written record, and unless we knew that individual effort and achievement is always considerably in advance of the written record, we should be tempted to assert that

therapeutics had made no progress at all. For all our current text-books of materia medica and therapeutics give any sign, the stupendous work of men like Thompson and DeVries and van t'Hoff, and others similar to that ilk, might never have been done. All the recent marvelous research and provings in the fields of physical chemistry and biologic chemistry—the radical changes that have taken place in our conception of the nature of matter and the significant phenomena pertaining to surface tensions—all this important innovation seems to have found practically no response whatever in the study and teaching of pharmacology and therapeutics, at least so far as medicine is concerned.

Not even the medical chemistries take proper cognizance of this change in the face of affairs, but for the most part continue to teach the old atomic theories, and to base their conclusions upon the old static concepts of matter. And in the medical colleges, where modern up-to-date men are in charge of the chemical lecture-room and laboratories, it is a common thing to find the chemist and the pharmacologist in continual conflict with their teachings and their findings, and the students in a quandary as between the two. Only a day or two ago it was the writer's amusing experience to hear the teachers of these two subjects respectively engaged in a lively (albeit friendly) dispute on the question of the structural relations of certain compounds concerned in a problem of toxicology—if we mistake not, it was a question of certain arsenic compounds—and the fact of the matter was that between these two disputants there was absolutely no real controversy, but one was dealing with the subject from the old substantive viewpoint while the other was regarding it from the newer, dynamic standpoint of the electron and the ion.

Now if there be any virtue at all in the electron doctrine—and we doubt if any but the most obstinate stand-patters will be bold enough to question it—then certainly it must shed a whole flood of light upon the pharmacology of drugs, if someone with a sufficient knowledge of both physical chemistry and of pharmacology will only take the trouble to apply the discoveries and observations of physical chemistry to pharmacology. If the phenomena of surface tension and similar processes of which DeVries and van t'Hoff have been the chief exponents have any organic significance at all, then they certainly must modify our views of the action of drugs upon the tissues and fluids of the body; and ought to revolutionize our therapeutic principles, if someone would but furnish us with the connecting link between the two. But, for some reason or other, this is precisely what nobody seems disposed to do. And so all of the remarkable work of the men in these fields has thus far gone for naught, for all the therapeutist is concerned, and the text-books of materia medica and therapeutics are still giving us the theories of drug-action that belonged to the last century, when as yet physical chemistry and surface tension were vague academic conceptions.

In a certain sense we have outgrown the old therapeutics. We no longer talk about, or practice, the mass-action of drugs, nor even the so-called physiological action (which was anything but physiological). We have come to realize that the essence of therapeutics consists, not in the action of the drug upon the patient, but in the reaction of the patient to the drug. And the essential weakness of present-day therapeutics lies in the fact that, while we have grown away from this old conception of therapeutics, we have not yet established in its place a system which will meet the requirements of the modern concept. That is one of the most potent reasons for twentieth-century drug nihilism. Yet no one, so far as we are aware, has ever thought of seriously applying the modern doctrines of physical chemistry

to the art of therapeutics and thus to bring it in line with modern chemical science. It is no longer possible to explain the action of drugs upon the human system upon the old substantive basis. Everyone knows that; hence, as we have said, the prevalence of drug nihilism. Our knowledge of physiology and organic reactions has outstripped the old atomic theories of chemistry which still cumber our pharmacopeial text-books; and so we are disposed to throw away our pharmacopeias and our materia medicas and do without them. But there is a yet more excellent way. Let us take our pharmacopeias and our materia medica text-books and revise and reform them, in accordance with our modern chemistries. Make the relation between the chemist and the pharmacologist a real and vital one. Take the lamp of physical chemistry and throw its light upon the dark places of pharmacology, and we will venture the assertion that this now moribund subject will glow with renewed life, and that we shall see in it possibilities of which we have never yet dreamed.

* * *

A COLLEGE EDUCATION: PRO AND CON.

THE rapidly rising standard of preliminary education for the medical student is bringing more and more into prominence the question of the relative advantages and disadvantages of university or college training to the intending candidate for the medical profession, and is making it a question of urgent, practical import instead of the somewhat academic problem that it used to be. There is a great deal of opposition in many quarters to the imposition of such rigid educational requirements by the powers that control the qualifications of the medical man in this country, so that it becomes a very real and serious question, whether the practice of medicine actually requires the knowledge and training represented by a university, or at least a college, course as a preliminary to the study of medicine.

Broadly, the argument of the advocates of the higher standard consists in pointing to the increasingly exacting problems which medical science is called upon to meet. They call attention to the fact that medicine is no longer an art, as in former times, in which the individual qualities of the practitioner played a large part, but a more or less exact science, based, as all sciences are, upon the correlated observations and provings of a body of trained specialists, and that it is impossible for any man to properly or adequately acquire and utilize this organized system of pure and applied knowledge in virtue of his own native intelligence. It requires, they maintain, the same kind of trained and organized mind to understand it that it required to accumulate and systematize it, and this, they insist, can be acquired only through the agency of an equally correlated and organized institution of learning like a university or college. It is significant that the advocates of the higher standard include among their number almost all of the worth-while men in medicine today who did *not* receive the advantage of this kind of education—a fact which furnishes in itself a strong internal argument in favor of the positive side of the question. Yet it must not be given too much weight, since it is always natural and human for any man to regret what he regards as the lack of certain advantages in his own life and to desire that they be afforded to the younger generation in whom he has an interest, without any great care to enquire whether they be really the advantages that he takes them to be—just as we are all disposed to give our children privileges and opportunities to which we in our youth were strangers, by sheer reason of our own lack of them, without stopping to enquire whether the easy possession of such advantages may not paralyze in them the very qualities which enabled us to outride our lack of them.

The principal argument of the opponents of the higher standard (by which, of course, we mean the opponents of the compulsion of higher standards) is that it bars the door of entrance to the profession to many a young man or woman who is by nature and culture well fitted to undertake the practice of medicine, and perfectly capable of getting from a four or five years' medical course all that is necessary to a successful practice, but who, for various reasons, may not be in a position to put in the required attendance at high school, college or university, or even to pass the preliminary examination which the majority of the States prescribe as an alternative. They do not believe that all the subjects of study stipulated for are necessary to the making of an intelligent and successful practitioner of medicine. They hold that a man can do very well without a detailed knowledge of medieval and ancient history, for example, and still achieve genuine capacity for, not to say distinction in, the practice of an applied science. They accept the dictum of the other side that medicine is no longer an art, but an exact science, and upon that very ground argue that it is no longer necessary for an exponent of this exact science to be a man of letters and arts, as when medicine itself was regarded as an art. And, finally, they point (with truth and reason) to the significant fact that almost all of the men who have done the really great things in medicine—the giants of the profession—have been men who had no university or college education, but acquired all of their wonderful knowledge and power by dint of their own native intelligence.

The strange thing about the dispute is that the disputants on either side always seem to be intensely prejudiced and "set" in their position. It does not seem to occur to either side that there is another viewpoint, and that it might be well to compromise. Yet, as it appears to us, there never was a question which lent itself so reasonably and wisely to compromise as this one. The truth is, that as we look over and consider the arguments advanced by both sides, we are compelled to the conviction that both are just as right as they can be. And under such conditions, the unavoidable conclusion is, not so much that the controversy is one which calls for compromise, but rather that there is really no controversy at all, but only a difference of angle of view, or perhaps of application, calling for co-operation in working the matter out.

No one, we think, will seriously dispute that the exactions of modern medical science, both in its educational and in its practical aspects, *do* make demands upon the mind which, in the average man, can be met only by the organized institutional training obtained in a college or a university. If we deny this in part, we must deny it *in toto* and assert the uselessness of all university education. On the other hand, we do not believe any sensible, practical man will deny that it is quite possible for individual men to attain proficency in this, as in any other applied science, without the advantages of college or university training—to whom, indeed, for various psychological reasons, such training would be a disadvantage rather than an advantage. And, further, we ourselves can not help feeling that a great many of the subjects in which modern standards require the medical student to be cultured, however, desirable they may be for the general broadening of the mind, are rather far-fetched necessities in the study and practice of medicine.

Why can not all these things be conceded, and provision be made in the scheme of medical education for all of them? It is done in England and Germany. Why not here? And lest we be accused of offering criticism that is not constructive, we will, in a future editorial, at no distant date, outline some basic lines upon which such a comprehensive scheme might be constructed, so as to take advantage of, and provide for, all the apparently conflicting phases of the situation.

Acute Intestinal Diseases of Infancy and Early Childhood.*

(With Special Reference to Etiology and Treatment.)

By E. L. Cooley, B. S., M. D.

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IN THIS excellent article Dr. Cooley gives us the results of his recent study and observation in the pediatric schools of Europe, particularly of Italy, where much splendid work has been done in the past few years, and is still being done, in the investigation of infantile intestinal diseases. It will be seen that this research work is completely revolutionizing the etiological aspects of the subject. The milk can no longer be regarded as the prime factor in etiology; but we must look to a thorough knowledge of the intestinal tract itself, and its flora, to explain these diseases. We urge all our readers to make a careful perusal of this valuable paper, and to profit by it.

Pediatric practice, as a substantive science, dates from the beginning of the nineteenth century, and owes its inception to the ravages wrought by gastro-intestinal diseases among infants, not only in foundling asylums, but in private practice as well. The inability of the profession at large to cope with this scourge concentrated upon it the attention of the ablest investigators of that time, with the result that pediatrics, hitherto considered only an adjunct of general medicine, requiring no special training, became one of the most important specialties of the healing art. It was due very largely to the impetus given scientific investigation by the careful study of these diseases that modern pathology has reached its present eminence.

Of all the affections peculiar to this period of life, the diseases under discussion are the most numerous, most fatal, and, perhaps, the least understood. This state of affairs arises from several causes, chief among which are the prevalence of artificial over natural feeding, the neglect of the study of the physiology of infantile digestion, and according too great an etiological rôle to local anatomico-pathological changes. Only within the last decade has it dawned upon investigators that the avenue of approach to the etiology of these diseases lies in the study of the physiology of the infantile digestive tract, and not by way of the pathological changes and clinical manifestations. For the intelligent treatment of any disease, it is necessary to know its etiology. This knowledge involves a thorough understanding of the physiology of the parts concerned, especially any deviations from the normal; and it is to this phase of the subject that we must turn for enlightenment in any attempt to gain a comprehensive knowledge of these diseases as a whole.

*Read at the Tri-State Medical Society, Jacksonville, Ill., September 24, 1912.

Etiology.

The first point to be considered in the causation of acute intestinal disturbances is the physiological peculiarities of the infantile intestine. These physiologic deviations may be arranged under the following heads:

1. Deficiency in Ferments.

The infantile intestinal secretion is deficient in quantity, quality, and sustained effort. By this is meant that, compared with the adults, not only is

infantile secretion less in quantity and decidedly lacking in digestive power, but that the immature glands are incapable of producing the normal output under such conditions which in the adult would *cause* no bad effects.

2. The Shortness of the Complete Intestinal Canal and Its Muscular Weakness.

This peculiarity has been little considered by invesigators, but that it exists and can become a potent cause of evil, if overlooked, is easily shown. The infant intestine has a complete length of about 3.5 meters as against 8 or 10 meters in the adult, which is not compensated for by the great relative length and capacity so frequently emphasized. The entire length of the intestine of the new-born child would extend in the adult only to the lower third of the small intestine; and hence it is apparent that, reckoned upon a similar length of intestinal passage, the power of absorption is more favorable in the nursling. Nevertheless the shorter length of the entire intestine of the new-born infant, together with the smaller number and size of the glands, permits no more digestive power than is necessary for the assimilation of the breast-milk the child normally requires; and this amount is gauged by the normal capacity of the infantile stomach. Over-feeding, not only artificial, but by natural means as well, exceeds this physiological limit, and evil results surely and constantly follow.

A certain excess of breast-milk, as well as cow's milk, carefully prepared and administered, is ingested without apparent harm; but the tolerance as opposed to the deviation from the normal, while it may show individual variation, is strictly limited, and becomes more circumscribed the younger and weaker the child.

This intolerance is greatly augmented by the muscular weakness of the infantile intestinal wall; and excess of food, either artificial or natural, invariably produces intestinal stasis. The absorptive powers become markedly increased during the second half-year, and in their further development the digestive organs acquire that wonderful faculty of compensation which enables man to satisfy his nutritive needs under the most varied conditions and zones.

3. The Delicate Sensibility of the Infantile Mucous Membrane and Its Special Irritability and Vulnerability to Mechanical and Chemical Stimulation.

In mucous membranes directly exposed to external influence a process or habit or hardening is observed whereby irritation at first, feeble or slight, produces a severe reaction, but eventually shows little or no effect. The delicate anatomical relations, the vascular richness of the mucous membranes and the greater amount of water in the tissues, and the relative preponderance of nervous elements, have all been invoked in explanation. Not only is the irritative stimulus necessary to produce these changes much lessened and more feeble in comparison with the adult, but the reaction is uncommonly turbulent from the early loss of epithelium; and inflammatory processes develop in tissues which may distribute over large areas of intestine and retrogress very slowly even after the irritative origin has been removed. The true cause of this phenomenon does not lie in any one of the factors above cited but rather in all combined, and simply means that the intestinal mucous membrane of the new-born must and does undergo the process or habit of hardening, the same as that of the oral and nasal cavities, and the mucous membrane of the respiratory tract, complicated here by greater functional activity and importance and inaccessibility to treatment.

This peculiarity has an important bearing upon the origin and cause of the digestive disturbances of infancy and is

all the more significant in that in all the tissues of the infantile digestive tract there exists a special susceptibility to, and predilection for, bacteria and their products of metabolism. Proof of this statement lies in the fact that the pathology of the new-born shows such severity, frequently, and mutiplicity of septic diseases seen at no other time of life. This habit of hardening proceeds from above downward and keeps pace with the advance of age and the change of diet.

4. The Nursling Possesses a Normal and Profuse Intestinal Flora Which Apparently Exerts no Deleterious Action, Notwithstanding the Fermentative and Even Pathogenic Property of the Bacteria.

A thorough understanding of this condition is impossible in the present state of our knowledge; but the uniformity of the different varieties of intestinal bacteria, as well as a study of their biologic properties, prove that we are dealing with a vegetation, suited to special individual conditions and has no analogy with the bacteria found in cow's milk, or in decomposed material. We must assume, therefore, that the intestinal bacteria play a useful rôle in the processes of normal digestion. This is obvious from the fact that a change of vegetation and the introduction of abnormal saprophytic and proteolytic processes are sufficient to disturb the health of the child and the course of digestion.

Such, for instance, is the origin of the fermentative dyspepsias peculiar to early infancy: so, also, the acute intestinal digestive disturbances of this and a later period, more frequent in artificially nourished children, but found in the breast-fed as well. Milk, either artificial or natural, being the exclusive food of the child, on account of its composition and high percentage of water, is especially liable to bacterial change, thus furnishing a ready vehicle for the propagation of evil results.

Whether or not the presence of intestinal bacteria is essential to the well-being of animal life is a moot question: the latest experiments in this particular field being nugatory to that belief. Be that as it may, the fact remains that very early in post-uterine life bacteria find entrance into the intestinal canal, there to remain as constant integral parts of the organism, and must be reckoned with for good or evil.

The ease with which these micro-organisms effect entrance and thrive in the gastro-intestinal tract is due to another physiological peculiarity of infancy, viz., the weak antiseptic power of the salivary and gastric secretion, especially the gastric juice. The bacteria readily enter the oral cavity; are soon carried into the stomach with the ingested milk. Here their brief residence, together with the admixture of the scant hydrochloric acid with the salts and albumin of the milk, retard instead of favoring their destruction and they are swept into the intestine with the chyle-stream practically unaltered. In from four to twelve hours the first bacteria appear in the stools of the new-born, usually demonstrable in the second or the third evacuation. The bacteria of the meconium period are spore-bearing and practically all types (some nineteen in number) are found here that later appear when the flow of milk is established. Moreover, the character of the intestinal flora is profoundly affected by a *change of food*. If a normal breast-fed baby be subjected to artificial food, a radical change in the intestinal bacteria invariably takes place, the normal intestinal flora of the breast-fed giving place to vegetation characteristic of cow's milk. A return to the natural food is invariably followed in two or three days by a return of the normal bacteria of breast-milk. The character of the intestinal flora of the nursling can be

changed at will by varying the kind of food. *Not only the kind, but the quantity and quality of the food as well,* markedly affect the character of the intestinal bacteria. A food deficient in one or more of the proximate principles, or one normal in these particulars but given to excess, will cause radical changes in intestinal flora. These changes may take on a variety of forms; (1) The biochemical character of the normal bacteria may be so altered that a hitherto benign species becomes highly virulent; (2) The normal types may retain their physiological properties but become so weakened and depleted that they can no longer resist the invasion of pathogenic forms from without; (3) The normal varieties may, in large part, disappear altogether, their place being taken by pathogenic species. It can be stated as axiomatic that so long as the normal intestinal bacteria retain their physiological integrity no invasion of pathogenic forms will take place from without; and consequently, no infection can obtain. The normal intestinal bacteria safeguard the entire gastro-intestinal tract; aid and facilitate digestion and absorption; prevent invasion from without; and, if such invasion does occur, inhibit and destroy the invaders.

The underlying cause, therefore, of the vast majority of intestinal disorders of infancy and early childhood, *is a changed diet;* whether this change consists in the substitution of an artificial for a natural food, feeding to excess or the use of a food too low or to high in value of any of the approximate principles, it brings about practically the same results. Any deviation from the normal standard in character, quantity or quality, causes retrograde changes in the intestinal flora, commensurate with the scope and character of these food changes. This dictum holds good, whether the particular disease be an inflammation induced by the active eruption of some pathogenic bacterium, a simple digestive disturbance, or a catarrhal dyspepsia. Strictly speaking the intestine appears, as is obvious from recent experiments, to have a selective bactericidal action against what might be termed foreign bacteria alone, and not those which it requires. This bactericidal power is only operative when the normal intestinal flora possess their full physiological activity. It is also very probable that this protective measure is more feeble in the nursling, as indicated by the care which nature has taken to prevent the entrance of germs into the natural food and to avoid processes of decay in the intestinal tract. If this theory of the etiology of these diseases be correct, it is not necessary to assume the existence of any specific micro-organism to account for their presence. Any one of the well-known varieties is fully capable, under changed conditions of diet, of inaugurating these pathological processes. So also must we relegate to the grave of oblivion the theory that "milk infection" is the prime factor in their causation. The nature and character of the bacterial contamination of milk we know well enough. Likewise are we fully acquainted with the fermentative and putrefactive processes which this fluid undergoes in the open air. The same general laws obtain when it is confined to the intestinal tract. It is not to be understood that no deleterious influences or results will follow the ingestion of a milk high in bacterial content. The flooding of the intestinal canal with a milk loaded with putrefactive bacteria, for instance, will unquestionably hasten these pathological processes and augment their severity; but not until the physiological integrity of the normal intestinal bacteria has been vitiated and their fighting power dissipated. A case of cholera infantum does not arise from a single feeding of a highly contaminated milk any more than a bottle-fed baby will contract marasmus during the first week of such food. Time is required in

both cases to prepare the soil, deplete the fortress, dissipate the defenses, whence invasion is rendered easy.

This point is dwelt upon at some length, because many text-books on pediatrics teach that the primary causative factor is an infected milk. In the various clinics attended many cases of intestinal disorders are treated of every kind and description and varying degrees of severity; and the observation and experience in these cases forces the conviction that infected milk, *per se,* plays a very minor rôle as an etiological factor. Careful elucidation of the history of such cases will show that errors in diet invariably preceded the attacks. It is not necessary for these errors to persist for any great length of time to prove the contention. An examination of the stools reveals a changed intestinal flora, the individual types being foreign to the normal intestine.

If these types were introduced with the ingested milk, we know they could not live and thrive so long as the normal intestinal flora retained their physiological activity. This activity is lost only through *changed diet.* Therefore, contaminated milk can not be assigned as the fundamental cause, *per se,* however much it may be concerned in augmenting the pathological condition. One potent factor responsible for many of the benign intestinal disorders is the disturbed topography of the intestinal flora traceable to over-activity of the lactic acid forming bacillus. The increased fermentation, together with the excessive formation of gases, increases peristalsis, which in turn brings down into the lower bowel bacteria foreign to that field. It is conceivable that a milk rich in such bacteria could augment this condition. Also a milk in proteolytic bacteria would increase the formation of gases in the intestine and hasten the same end. In this way we could, by stretching a point, ascribe to contaminated milk a certain rôle in the causation of these diseases. The point to remember is that milk infection bears the same relation to the etiology of these diseases as mechanical or chemical irritation, thermic or nervous influences; it is an accidental causative factor and no more.

In connection with the subject of milk infection, it might be well to notice the much discussed question of proteid decomposition. It is very doubtful if this factor plays as important a causative rôle as was once supposed. Casein, the chief proteid of milk, tends but little to decomposition, and when such a process does occur it is most probably due to the readily decomposed proteids of the intestinal secretions. Furthermore, the most severe toxic symptoms, such as are seen in acute cholera infantum, run their course with a decidedly acid reaction of the intestinal contents and the feces. Blumenthal has shown that toxins arising in milk and in the intestine need not, as was formerly supposed, owe their origin to destruction of albumin bodies, but may be formed synthetically by saccharolytic bacteria. Again, the coli-anerobic and acidophylic vegetations which predominate in the large intestine of the breast-fed nursling do not attack the residual food. In the artificially nourished, especially when cow's milk is employed, the proteolytic bacteria predominate in this section and would naturally attack proteid bodies. The proteids of milk, however, possessing greater resisting power, would be the last to yield, and it is tantamount to certainty that the disturbances attributed to proteid decompositions are due to the destruction of the albuminous bodies of the intestinal secretions.

Treatment.

The keynote to the successful treatment of these diseases is prophylaxis, beginning with the first breath of the new-born. There is no such thing as a specific, and drug medication after the disease is in full swing is purely empirical. To successfully combat these

affections before they begin, the physician should know not only the physiological peculiarities of infantile digestion, but possess the ability to make a quantitative estimate of the individual meal and the daily amount as well as the limitation of food to the physiologic requirement. This involves a knowledge of the caloric value of the different food principles. The individual idiosyncrasy to any particular food constituent; the facility and completeness of intestinal absorption; the normal amount of individual nourishment; and, above all, he should have the co-operation of an intelligent mother.

Any prospective mother of ordinary intelligence can be educated in the fundamentals of child-care embodied in the following points:

1. The duty of nursing her own child.

2. The evil effects of over-feeding; and, as a corollary, the symptoms incident thereto and the fact that stagnant breast-milk often carries a virulent poison.

3. The value of, and the necessity for, strict antisepsis in everything pertaining to the oral cavity and objects coming in contact with the child's mouth. In older children, carious or decayed teeth should be removed upon discovery, and mouth-breathing and any tendency to tonsilitis reported without delay.

4. The dissipation of that time-worn bugaboo, that fresh air and sunlight are inimical to health.

5. The necessity of isolating the sick child and destroying the stools.

6. The fact that freedom of limb and crying are the only natural means whereby the infant obtains exercise. Therefore, absolute freedom of limb movement is imperative and a certain amount of crying is beneficial rather than harmful.

Of the therapeutic measures employed in the treatment, little need be said here —text-books and periodicals are loaded with suggestions and formulas—we are surfeited with a multiplicity of remedies and a paucity of virtues. Suffice it to say that, based upon rational therapeutics, active medication would arrange itself under the following heads:

1. The Removal of Harmful Masses from the Intestine.

Irrigation, wherever possible, as in the stomach and colon, offers the best means to this end. In the small intestine, laxatives, calomel and castor oil.

2. Relief of Abnormal Decomposition.

The obvious method, that of disinfection, is inefficient or impracticable. Of all the drugs recommended for this purpose, acetozone, in my hands, has given the best results when it can be employed. Unfortunately its method of administration is not adaptable to very young children, yet even here it is preferable to the more commonly employed antiseptics, especially those insoluble in water. Much less dangerous and far more effective in combating fermentative and putrefactive processes, however, is dietetic therapy. The complete withdrawal of those foods which have provoked the disturbance; of the carbohydrates and especially sugar in acid fermentation of the upper intestine; of albuminous food when the decomposition occurs in the colon with symptoms of putrefaction, and alkaline reaction. In the latter case this principle of deprivation does not always operate successfully; for even with a complete hunger diet the readily decomposable albumin of the intestinal secretions is still present. Hence, in these cases, a second method must sometimes be invoked, consisting of the administration of small amounts of starch, or the substitution of whey or sour buttermilk as a temporary nutrient. Of the two last named, whey is preferable. To every six ounces of whey, add two teaspoonsful of condensed milk and five grains of the citrate of soda; feed as in

ordinary milk nutrition. It should be understood that the salts are more highly concentrated in whey than in milk; consequently, the former can only be used as a temporary diet. Another point to remember is that the lumen of the intestine must be kept reasonably distended with fluid. Practically the same amount of fluids should be given in dietetic therapy as the child takes normally of nourishment. The reasons for this are obvious. The above methods are more applicable to the onset and early stages, before anatomical lesions and permanent derangement of function have supervened, before that cultivation of the ground has occurred upon which chronic catarrh with a terminating atrophy, relapses, infectious catarrh, and finally severe inflammatory changes develop. Death is too often the outcome of these affections which at the onset are usually harmless and relatively easy to control. In that group of bacterial diseases characterized as intestinal infections conditions are quite different, and the physician is well nigh helpless in the developed disease. The abortion of the process by laxatives or disinfectants is hopeless in the present state of our knowledge.

Although a certain influence may be gained by antiseptics over bacterial processes going on in the intestine, we can not consider a disinfection in the sense of a destruction of certain or all pathogenic agents.

Neither are we able by passive immunization or the introduction of alexins to increase the resistance or bactericidal power of the body, although such attempts have been made in diseases caused by the coli group. The infantile organism must therefore depend upon its own resources.

In this struggle of the infant against these infections, two factors enter into the conflict; and to their influence is due, more than to anything else, a favorable termination.

(1) The favorable reaction following the ejection of the noxious agent, or its elimination.

(2) The bactericidal agencies and localized immunity which follows the infection.

The former we attempt to bring about as best we may with our limited resources. The second factor lies wholly beyond our ken and can only be feebly influenced one way or the other by general protective measures. Nature has provided two weapons, however, to fend for the helpless infant in its fight against the microbes: (1) the formidable leucocyte wall in the intestinal muscosa, (2) the marked increase in the intestinal secretions. This latter occurs irrespective of food intake and is certainly a most efficient protective measure. The characteristic bactericidal properties of the intestinal secretion have but recently been discovered, and appear to arise chiefly from the secretion of the mucous cells. In some acute cases bacteriologic investigation of the feces reveals a much diminished permeation of the mucous fragments by the bacteria, which are grouped in small clumps or zooleæ, practically agglutinated. In contrast to this, there is in other cases a more uniform permeation of the fecal masses; a more profuse and qualitatively different vegetation. In chronic exhaustive diarrheas there is noticed a conspicuous bacterial decomposition and a fluidification of the mucus, with brownish, soup-like stools; all probably evidence of complete destruction of bactericidal power of the organism.

In view of the bactericidal action of the intestinal secretion, any attempt to check its flow or inhibit its action is not good practice. Avoid, therefore, the use of astringents or opiates internally. Calomel is contraindicated here on account of its irritating effect. The same can be said relative to colon irrigation. Do not attempt to stimulate intestinal secretion by the use of laxatives. Seek

rather to maintain a sufficient quantity of fluid to play upon the lumen of the intestines as is provided by nature. If the ingestion of liquids is prohibited by vomiting or any other cause, supply the deficienty by subcutaneous injection of normal salt solution. After an interval of total abstinence from all food, corresponding to the condition of the intestine, stimulating diet must be given; such as broth, gelatin, wine, whey, etc., a few drops of iced champagne several times an hour often checks the vomiting and is well borne at all times. The severity of the constitutional phenomena and the implication of other organs call for careful and individual management of symptoms at all times. The physician, however, will be able to exert but little decisive influence once the battle is joined. The greatest good resulting from our efforts and knowledge will accrue in the domain of prophylaxis, and it is toward this field of endeavor that our work should be directed.

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GYNECOLOGIC DISEASES IN THE INSANE.

First criticising the extravagant statements, especially by foreign authors, in regard to female disorders in the insane, F. J. Taussig, St. Louis (*Journal A. M. A.*), gives an analysis of a study of 537 women inmates, out of a total of 900, made by him as gynecologist to the St. Louis City Sanitarium during the past year. The violent patients and paretics were largely omitted, but the others were taken in regular order without selection. The patients could usually be easily quieted and care was taken to see that the measures employed did not aggravate their condition. Two hundred and fifty-two of the 537 were found to have some pelvic lesion that might cause symptoms. Minor abnormalities such as are usually found in every case were not included. In about one-fifth more than one lesion was found. There were no cases of malignant disease, but mild chronic inflammatory trouble was frequent; retroversions of the uterus were very common and still more so relaxation of the pelvic floor and abdominal wall. Taussig thinks that the prolonged confinement, together with the attendant constipation, might well be responsible for the latter condition. Usually a much larger percentage than the 47% here found is reported in such investigations. In three of the important groups—senile dementia, terminal dementia and paranoia—the percentage of pelvic trouble was only about one-third. in dementia præcox about one-half the women were diseased. About two-thirds of the imbeciles were so classed, and in the maniac-depressive group gynecologic lesions were found in as high as 74%. As nearly as could be determined 141 of the 252 women required some form of gynecologic treatment. In operations on the insane he aimed as far as possible to save part of the ovaries of each and at the same time resect a portion of the uterine end of the tubes, provided that consent of the relatives was obtained. This is largely on eugenic grounds. The results of the examinations and of the operative treatment are tabulated. He calls attention to three facts developed: "1. The decidedly greater frequency of gynecologic disease in this form of insanity (maniac-depressive insanity)—74% as compared with the average of 47%. 2. The large proportion of chronic inflammatory conditions of the genital tract in this form of insanity. 3. The proportionately large percentage of mental recoveries after gynecologic operations done on women having this form of insanity. 'I conclude, therefore,' he says, 'that in maniac-depressive insanity every patient should be subjected to a gynecologic examination and that when a definite lesion is found this should be corrected either by local or operative measures.'"

Autointoxication.

By HERMANN BOEKER, M. D.

AUTOINTOXICATION still remains one of the most prevalent and formidable causes of adult metabolic diseases. But, as the author of this article aptly points out, erroneous conceptions of the nature of autointoxication has arisen from the acceptance of too many discordant theories. It is the author's purpose in this paper to unravel some of these discords, and to set the matter in a clear, simple, rational light, and to deduce from his clarified premises an equally clear and simple and rational system of therapy. How well he has succeeded, it needs but a careful reading of his article to demonstrate.

In much the same manner that transparency of meaning is frequently destroyed by excessive use of the instruments of expression, a full understanding of observed phenomena is often hindered by undue application of hypotheses.

Just as that kind of obscurity which we call ambiguity sometimes arises from the use of too many words, so do erroneous conceptions occasionally spring from the acceptance of too many discordant theories. In much the same manner that a knowledge of philology is conducive to that quality of speech which we term perspicuity, or lucidity of expression, a knowledge of pathology contributes to a proper interpretation of morbid phenomena. Words that have no exclusive function in the presentation of a thought inflate the sentences and obscure the thought; theories that have no actual bearing on observed morbid phenomena distract attention from their real cause and lead to their misunderstanding. Too many cooks spoil the broth; too many words conceal our meanings; too many theories impair our conceptions.

There can be no gainsaying the fact that much of the confusion concerning the morbid phenomena brought about by the toxic products of metabolism is due to the widespread currency of conflicting theories and the ambiguity of those responsible for their promulgation.

A more general and perfect understanding of the condition commonly designated autointoxication would now obtain had there been less theorizing and verbosity on the part of those who have attended to the subject. An unwarranted amount of perplexity concerning the morbid processes induced by the poisonous products of metabolism has resulted from a too hasty acceptance of unsound theories and a too generous use of indefinite terms; the literature on the subject of autointoxication has been weakened through the introduction of defective speculation and verbal diluents.

The skepticism with which the majority long continued to regard the whole doctrine of autointoxication is no longer in evidence; all save the most backward and stolid are now well aware of the fact that derangements of metabolism are frequently attended with the production of poisonous materials that exert a profound influence on the general economy. Indeed, it is now universally conceded that autointoxication is the underlying cause of an exceptionally large group of symptom-complexes.

Acid Autointoxication of Greatest Importance.

Because of the relative frequency of its occurrence, that form of autointoxication which is characterized by an excessive accumulation of the acid products of perverted metabolism is of the great-

est clinical importance. This so-called acid autointoxication may be a consequence of an overproduction of acids, it may be due to an inadequate elimination of them, or it may arise both from an excessive formation and a defective elimination of these substances.

For reasons that are obvious, acid autointoxication is manifested in various degrees of intensity: it may be so mild that it will escape the notice of casual observers; it may appear as an acetonuria; or it may be revealed as a grave acidosis such as is frequently seen in subjects of diabetic coma.

In acid autointoxication, there is an inhibition of the oxidative processes, a loss of equilibrium between the assimilative and eliminative forces, a perversion of glandular function, and a diminished alkalinity of the blood; in other words, the transformation of food-substances into assimilable form is hindered, the distribution of nutritive elements to the tissues is encumbered, the elimination of waste products is retarded, and there is an abstraction of alkaline substances from the blood.

During normal metabolic processes a number of acid products of the disassimilation of carbohydrates, fats, and proteids are formed as intermediary bodies that either undergo further physiologic degradation or that can not be oxidized further and are, consequently, eliminated through the excretory channels. Of these bodies, carbon dioxide is eliminated, in chief, through the air passages, while hydrochloric, phosphoric, sulphuric, and uric acids, in combination with alkalis abstracted from the organism, are eliminated through the urinary passages.

Under normal conditions the alkalis abstracted from the organism through this combining with acid bodies are fully restored by the ingestion of foods containing them. But when there is brought about an overproduction of acid bodies or a diminished intake of alkalis, by perversions of metabolic processes or improper food-supply, there develops a systemic shortage of alkaline material, which state is invariably attended with pronounced disturbance of the vital forces.

The Importance of the Alkalis.

As is well known, a normal state of the organism is directly contingent on the presence of a certain amount of alkaline substances in different modifications. Alkalis constitute an integral part of protoplasm, in which they appear, chiefly, as potassium salts in various combinations with albumin; and they maintain alkalinity of the blood, in which they appear, chiefly, as sodium carbonate and sodium phosphate.

In virtue of its alkalinity, the blood maintains in solution the various waste products of metabolism and transports them through the circulatory system to the channels by which they are eliminated from the organism. But when the alkalinity of the blood falls below normal, its solvent influence on excrementitious substances is impaired and, as a consequence, the elimination of waste materials is encumbered to such extent that a stagnation of the organism is inevitable.

It is obvious that if, in addition to an inadequate alkalinity of the blood, there be an overproduction of pathological acids, such, for example, as oxybutyric acid, diacetic acid, and acetone, there must develop morbid phenomena that are fraught with serious consequences; in other words, a toxemia must ensue. This toxemia, or, more properly speaking, acid autointoxication, which is generally disclosed by such symptoms as headache, languor, melancholia, hepatic inactivity, constipation, and anorexia, can not, of course, be permanently relieved unless the production of toxic acids of perverted metabolism is arrested and the eliminative forces are repaired by the restoration of alkaline substances to the organism.

Briefly stated, the treatment for acid autointoxication is one of disintoxication and restoration; that is, an elimination of the toxic acids generated through perverted metabolic processes and a restoration of the alkalis abstracted from the organism through the combining of these acids with the alkaline salts of the economy.

Toxic Acids Fundamentally Due to Intestinal Fermentation.

Since it is certain that the perversions of metabolism lead to the formation of toxic acids usually have for their underlying cause the absorption of putrefactive products from the intestinal tract, it follows that we can not relieve acid autointoxication unless we overcome fermentative processes within the large intestine.

When we take into account the fact that the colon, through the more or less habitual retention of fecal masses, becomes dilated and resistant to peristaltic impulses and the action of laxative agents, it becomes obvious that its complete evacuation seldom takes place. As a matter of fact, we know that it is not an uncommon thing for the colon of persons of sedentary occupation or faulty habits to retain fecal masses for many days or weeks, even months.

Aside from the general intoxication brought about through the absorption of putrefactive materials generated by the fecal contents of the colon, there is a local, and usually more intense, intoxication of the muscular coat of the large intestine. This intoxication of the muscular coat of the large intestine is a common cause of the partial or almost complete loss of peristaltic action.

The truth of this assertion is evidenced by the fact that disintoxication of the muscular coat of the large intestine, as accomplished through the evacuation of the colon by the administration of suitable salines, frequently relieves constipation that has failed to respond to ordinary laxatives, such as aloes, cascara sagrada, podophyllin, and senna. It is further proved by our repeated failures to obtain satisfactory results from drugs that are supposed to stimulate intestinal peristalsis; the atonic state of the large intestine that arises from intoxication caused by putrefactive materials does not respond to such drugs as nux vomica. Clinical experience has exposed the folly of expecting too much in these cases from so-called laxative pills.

The Use of Alkaline Substances Indicated.

Since acid autointoxication is the outcome of an overproduction of the toxic acids of perverted metabolism, and inasmuch as the combining of these acids with the alkalis of the organism causes a shortage of alkaline salts, it is evident that the proper treatment of this pathologic condition consists in the administration of alkaline substances. By this, however, it is not meant that the indiscriminate administration of any one saline will suffice; nor is it to be inferred that a protracted course of drastic purgation is either necessary or beneficial. Moreover, it is not necessary to administer the appropriate alkaline substances with that degree of frequency which is ordinarily required in the employment of other drugs.

In the treatment of acid autointoxication, we shall succeed or fail, according to the intelligence displayed in the selection of the alkaline salts administered. If we content ourselves with large and frequently repeated doses of any one substance we shall fail; whereas, if we administer such salts as will replace the alkalis that have been abstracted from the organism, we shall succeed. The use of improper salines will serve to deplete the organism, while the employment of proper salts will restore metabolic processes to a normal condition.

By the proper administration of appropriate salines, we can at once remove the source of intestinal putrefactive proc-

esses, disintoxicate the organism, and restore the fluids of the body to a normal degree of alkalinity. In brief, we can relieve the pathologic condition that is aptly designated acid autointoxication.

When the sulphates of magnesium, potassium, and sodium are administered in conjunction with the chlorides of calcium and sodium, these salts, in virtue of their influence upon intestinal osmosis, cause an evacuation of accumulated fecal masses from the large intestine; in other words, they bring about the removal of the source of putrefactive processes. Meanwhile a portion of the salts enters the circulatory system, through which they combine with the toxic acids of metabolism. As a consequence of this combining of the alkaline salts with the poisonous products of perverted metabolism, the organism regains its alkalis, the blood is restored to normal alkalinity, and the excrementitious materials are eliminated through the excretory system.

With this elimination of toxic bodies and restoration of essential elements, we witness a full correction of metabolic perversions; in other words, the complex vital processes become normal.

Since the toxic acids generated through perverted metabolic processes, by combining with them, abstract calcium, magnesium, potassium, and sodium salts from the organism, it is manifest that but little benefit can follow the administration of any one of these salts; in fact, it has been clinically demonstrated that the administration of each one of these alkalis is necessary in the correction of the systemic shortage caused by acid autointoxication.

In almost every instance of acid autointoxication, an immediate and conspicuous improvement attends the employment of the calcium, magnesium, potassium, and sodium salts, if they be given together in proper proportions. Occasionally there develops a subacidity of the gastric juice, but this is easily overcome by the administration of small quantities of hydrochloric acid. The promptness with which such symptoms as headache, lassitude, anorexia, hepatic torpor, insomnia, and mental depression disappear under this saline treatment is often truly amazing.

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CHEMICO-METRICAL MADRIGAL.

I know a maiden, charming and true,
With beautiful eyes like the cobalt blue
Of the borax bead, and I guess she'll do
If she hasn't another reaction.

Her form is no bundle of toilet shams,
Her beauty no boon or arsenical balms,
And she weighs just sixty-two kilograms
To a decidecimal fraction.

Her hair is a crown, I can truthfully state
'Tis a meter long, not curly nor straight,
And it is as yellow as plumbic chromate
In a slightly acid solution.

And when she speaks from parlor or stump,
The words which gracefully gambol and jump
Sound sweet like the water in Sprengel's pump
In magnesic phosphate solution.

One day I said, "I will leave you for years,"
To try her love by rousing her fears;
She shed a deci-liter of tears,
Turning brown the turmeric yellow.

To dry her tears I gave her, you know,
A hectogram of candy; also,
To bathe her red eyes, some H_2O;
She said, "You're a naughty fellow."

I have bought me a lot, about a hectare,
And have built me a house ten meters square,
And soon I think, I shall take her there,
My tart little acid radicle.

Perhaps little sailors on life's deep sea
Will be the salts of this chemistry,
And the lisp of the infantile A, B, C
Be the refrain of this madrigal.

—Harvey W. Wiley.

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TROUSSEAU'S DIURETIC WINE.

Baccæ juniperi	10 drachms.
Pulveris digitalis	2 drachms.
Pulveris scillæ	1 drachm.
Vini xerici	1 pint.

Macerate for four days. Then add:

Potassii acetatis	3 drachms.

Express and filter.

Sig.: One tablespoonful four times a day.

What Can We Learn from an Examination of the Sputum?

By J. Favill Biehn, M. D., Chicago, Ill.

IN SPITE of the growing importance and increasing prevalence of laboratory methods in the diagnosis of disease, there is still altogether too little co-operation between the laboratory and the clinical side of medicine. The true diagnostic significance of the various laboratory procedures is not nearly enough brought out. The performance of these laboratory tests is far too perfunctory, and the doctor does not derive from it anything like the information, either as to diagnosis or as to therapeutics, that he should. Dr. Biehn's article will put him upon the right track, at least so far as sputum examination is concerned. After reading and digesting this article, the examination of sputum will mean far more to the physician than it did before.

A plea for the more frequent examination and a more thorough consideration of this important excretory product, one that unfortunately is too often neglected, is made.

Most physicians imagine that the examination of the sputum is called for only when we wish to examine for specific micro-organisms, such as tubercle bacilli. This, however, is not true. Many other of its characters have enabled the older practitioner of experience to make a diagnosis, and a correct one, even before the microscope was used.

Normal persons raise little or no sputum; a large amount, or any appreciable amount, therefore, should be considered pathologic.

The sputum may come from the larynx, the bronchi or the alveoli. Many times, however, the laboratory receives specimens that consist of salivary secretions only. The first sputum expectorated in the morning usually is the best for microscopical and physical examination. It must be borne in mind that this sputum does not necessarily represent material formed in the lungs. It may be due to laryngeal or naso-pharyngeal inflammation and, as a result of the posture of the patient, have settled into the alveoli during the night.

Many times the laity are needlessly frightened by the expectoration, especially in the morning, of large, tough, elastic masses containing streaks or spots of black. This is due to the increased activity of the bronchial mucous membrane at night, to compensate for the dryness caused by the inhalation of sooty particles during the day. Such sputum consists essentially of tough mucus, many desquamated epithelial cells with their accompanying bacteria, with a few pus-corpuscles which are always present.

Amount — The amount of sputum varies greatly. In incipient tuberculosis and dry diffuse bronchitis, occasionally in lobar pneumonia, the sputum is usually very scant. From this we may have all gradations up to cavity formation in tuberculosis and gangrene, in which as much as a quart may be expectorated in twenty-four hours. Midway between these, we have cases of chronic bronchitis, bronchiectasis, lung abscesses, perforating pleurisy, etc.

Consistency—The consistency varies inversely as the amount, except in pneumonia, where we have a tenacious, yet an abundant sputum. In acute bronchitis, bronchial asthma, whooping-cough, and influenza, the sputum is very tenacious and ropy. In pulmonary abscesses, putrid bronchitis, pulmonary gan-

grene, and edema of the lungs, it is very thin and watery, containing large numbers of pus-cells.

Tenacity—The tenacity usually depends upon the presence of mucus, but not always, as, for instance, in pneumonia, in which condition we have a very tenacious sputum, but not very much mucus.

Reaction—The normal reaction of sputum is alkaline, but if it remains in a cavity, the bacteria soon changes it to acid.

Color—Ordinarily it is colorless, but a great variety of colors are noted in the sputum. These colors are due to admixtures or to bacterial action. A bright-red sputum indicates blood. This may vary to a rusty or prune-juice sputum, such as we find in pneumonia. It follows pneumonia, infarction of the lungs, chronic passive congestion, gangrene, or it may come from the nose or pharynx, or, as is more frequently the case, may be due to the rupture of a blood-vessel in the lungs, being a true pulmonary hemorrhage. The sputum may be green in color from an admixture of bile, due to the rupture of an hepatic abscess. The green color is usually due to oxidation of pigments found in the sputum and normally produced by chromogenic bacteria. Ordinarily this color develops only after the sputum has stood, often it is due to the bacillus pyocyaneus and requires oxygen for its development.

Character—The sputum known as mucoid is transparent, tenacious, glary, containing a large amount of mucus. This is demonstrated by the precipitation of the mucus upon the addition of acetic acid. We find such a sputum in asthma and acute bronchitis.

A mucopurulent sputum contains mucus and pus, the pus usually being in small amounts, appearing as whitish masses or streaks, larger amounts showing a yellowish-green tint.

Purulent Sputum—This sputum, upon standing, will separate into a number of layers: above, albuminous material, hanging in long shreds below seropurulent material, usually opaque and watery; at the bottom of this we find the pus-corpuscles and bacteria. Such a sputum is found in bronchiectasis, abscess of the lungs, and ruptured empyema.

Chemical Examination of the sputum consists in a test for mucin and albumen. A trace of albumen frequently will distinguish incipient tuberculosis from chronic bronchitis. A large amount indicates pneumonia or pulmonary edema. In chronic bronchitis considerable mucus is found, while in pneumonia and tuberculosis much less is present.

Cheesy Masses, so frequently noted in tuberculosis, consists of necrotic tissue and are found in abscesses or gangrene of the lungs. In tuberculosis they are usually small.

Dittrich's Plugs resemble cheesy masses very much. They are frequently found in putrid bronchitis, and in bronchiectasis, and are composed of bacteria, and molds (or hypomycetes), fatty-acid crystals, free fat, desquamated cells, occasionally a few leukocytes. They are identical with the masses found in the tonsils and in follicular tonsilitis.

Curschmann's Spirals—These are found practically in every case of true bronchial asthma, occasionally also in chronic bronchitis. They consist of a spirally twisted network of delicate fibers, between which are seen eosinophil leukocytes and epithelial cells and sometimes diamond-shaped crystals, known as Charcot-Leyden crystals.

Fibrinous Casts—True bronchial casts, composed of fibrin, are observed in pneumonia.

Concretions are occasionally expectorated. They consist usually of calcium salts, and come either from a bronchus or a cavity. Many times they are not formed here, but are inhaled originally in the form of dust; they consist princi-

pally of the carbonates, phosphates and sulphates of calcium and of magnesium.

The microscopical examination of sputum shows us pus-cells or leukocytes and red-blood cells. The former are always present, the latter only occasionally. There are also various types of epithelial cells present from the mouth, pharynx, nose, bronchi or alveoli. Some of these cells contain coal-pigments, others contain hemoglobin. These latter are especially numerous in chronic heart disease, so-called heart-lesion cells.

Elastic fibers are always found in destruction of lung-tissue. Frequently one can detect them in the sputum before tubercle bacilli can be found. They are, therefore, of great importance.

Bacteria—Bacteria are usually very numerous. Many are purely saprophytic and therefore have no clinical significance. Almost all the common bacteria, including the molds and yeasts, may be found in the sputum at various times.

Tubercle Bacilli—Of the pathogenic type, the tubercle bacillus interests us the most. This of course requires a special staining method, and usually, when demonstrated in the sputum by staining methods, puts the diagnosis beyond question.

It is very rare that we find acid-fast and alcohol-fast bacilli other than tubercle bacilli in the sputum. Lepra bacilli are also found, and occasionally smegma bacilli, although this is very rare.

Pneumococcus—Next in importance comes the pneumococcus. We do not, however, depend upon the finding of the pneumococcus in the sputum to make a diagnosis of pneumonia. Pneumococci are present in the throat of practically 60% of all normal individuals during the winter season.

Friedlaender's bacillus and the bacillus mucosus capsulatus also sometimes are found in pneumonia, and in tonsillar and laryngeal inflammations.

Influenza Bacillus—This organism is found in the bronchial secretion of influenza, and often associated with the micrococcus catarrhalis in chronic bronchitis. To my mind, it is highly essential that the sputum be examined, in order to establish whether the condition we are dealing with is caused by the streptococci, pneumococci or the influenza bacilli. During the height of the fever influenza bacilli are found outside of the pus-cells, but as soon as convalescence begins and the fever leaves, they are found mostly within the pus-cells. They may disappear very early during convalescence. It seems that they are only phagocyted in the sputum after convalescence has set in.

Streptococci and staphylococci are also very frequently found.

Rarely the typhoid bacillus, the bacillus pestis bubonicæ, anthrax bacillus, bacillus mallei (glanders) are found.

Occasionally certain animal parasites, such as amebas, cestodes, flagellates, and occasionally trematodes are encountered. These are known as lung-flukes and are usually associated with putrid bronchitis, gangrene or cavity formation.

Pulmonary tuberculosis shows no characteristic sputum. The amount expectorated varies greatly, but is always very abundant in cavity formation.

In incipient tuberculosis there may be practically no sputum. In these cases, however, we very frequently can find tubercle bacilli if the patient has been caused to cough as severely as possible, holding several glass slides two or three inches from the mouth, which are then fixed and stained. One will be surprised at the unexpected number of times he will discover tubercle bacilli.

In incipient tuberculosis the first sputum is scant, foamy, white, and contains much mucus—rarely drops or specks of blood are seen. It is rusty only when there is a complicating pneumonia. Later it becomes more abundant. First it is glary with whitish masses of

alveolar cells; then yellowish and purulent; finally yellowish-green, owing to the action of saprophytic bacteria. Rarely does it exceed more than one pint in twenty-four hours. Tubercle bacilli are found in one-third of the incipient cases before physical signs obtain. Elastic fibers are found in from 70 to 90% of all cases.

Elastic fibers always mean destruction of lung-tissues. If tubercle bacilli are not found, it does not mean that there is no pulmonary tuberculosis. A number of conditions may obtain in tuberculosis in which the specific organism will not be found in the sputum. It is therefore necessary, if the examination proves negative, to repeat the same frequently before deciding that the case is not pulmonary tuberculosis.

While it is true that all cases of tuberculosis of the lung should be diagnosed before the tubercle bacilli appear in the sputum, yet it is unfortunately too true that the majority of the cases are not so diagnosed by the general practitioner. In fact, many cases could be diagnosed weeks, yes, months, before they actually are, were the sputum more frequently examined.

Very frequently in tuberculosis, even before we find tubercle bacilli, we are led to suspect the disease because of the large number of mononuclear leukocytes, these forms being more characteristic of true tuberculous conditions. In other inflammations, with the possible exception of influenza, the polymorphonuclear type prevails.

The number of tubercle bacilli in the sputum is usually no criterion of the number really present in the lung or of the severity of the disease.

Croupous Pneumonia—At first the sputum is scant, transparent, mucoid and viscid. At the end of the second day, in 80% of the cases we have a red or rusty sputum. It may average up to seven ounces per day. It is not rusty in affections of the upper lobe, in children who swallow the sputum or in senile pneumonia. A rusty sputum has considerable diagnostic value, as it indicates resolution. A yellow sputum, however, is the first indication of this condition. Fibrinous coagula or casts of the bronchioles occur during the third to the seventh day.

Influenza shows a characteristic greenish-yellow nummular sputum. It may be greenish-gray. It is usually voided in flat, coin-like masses, and sinks in water, as it is airless. Frequently it is blood-stained. Often the viscid character is not so marked and the expectoration is more abundant. In influenzal pneumonia the sputum becomes purulent and even bloody.

Bronchiectasis shows a somewhat characteristic mucopurulent sputum that is expelled at irregular intervals, so-called "mouthful" expectorates. It averages a quart a day. The odor is sweat-like, acid and offensive.

Bronchial asthma shows a tenacious mucous sputum, resembling the white of an egg, with minute grayish streaks or specks, the perles of Lannec or the spirals of Leyden. Yellowish dots, or Charcot-Leyden crystals, are also present. Eosinophiles occur and constitute from 25 to 50% of the leukocytes. This is a typical sputum. During the paroxysm little or none is expelled, but later, as the disease progresses, sufficient sputum is coughed up, and this is of such a typical character as to make the diagnosis easy.

Gangrene of the lung shows a characteristic sputum. It is profuse, greenish-brown, and very offensive in odor, usually described as stinking-fetid; this odor lessens on standing. The sputum is voided periodically. It is always very fluid in character and may amount to one quart a day. It contains shreds of elastic tissue. Upon standing, it separates into three layers—an upper foam, a middle green-gray serum, and a lower green or brownish sediment containing flocculi of lung-tissue. Dittrich's plugs,

fatty needles, lung-pigment, pus, red-blood corpuscles, bacteria and triple phosphates are present. The reaction usually is alkaline.

In abscess of the lung there usually occurs a sudden voiding of a large amount of purulent, creamy sputum, offensive and alkaline in reaction. It separates into two layers, a frothy serum above, and a granular sediment below. It contains shreds of lung-tissue and many characteristic yellow-green to gray flocculi of elastic fibers. These are diagnostic. The sputum is also voided periodically.

In acute bronchitis the sputum is transparent, scanty, tenacious, and is expelled with difficulty. It contains much mucin, leukocytes, a few red-blood corpuscles and epithelial cells, and various bacteria of no one particular type. Micrococcus catarrhalis, pneumococci, streptococci or staphylococci and occasionally others are present. Later it became mucopurulent.

Acute bronchitis is usually followed by chronic bronchitis. This disease is divided, clinically, according to the character of the sputum.

First we have the dry form, or bronchitis sicca, in which there is a very scant viscid sputum.

The next form is known as bronchorrhea, in which there is an excessive sputum, either mucus, serous or purulent. In the serous form frequently as much as two quarts of a thin, transparent sputum per day is expectorated.

The purulent form exhibits a thick, creamy pus very similar to that found in lung abscesses or empyema.

Putrid bronchitis shows an ashen-gray or brown sputum, markedly purulent, with a very disagreeable odor. It is acid in reaction and sinks in water. If allowed to stand, it separates into three layers: above, a foam; then a clear serous layer; and below, a granular grayish-green or bluish sediment.

Fibrinous bronchitis shows the characteristic bronchial casts consisting of fibrin and usually branched.

Bacteriologic examination of the sputum will always give us some information. There is always something to be noted by the careful observer. Ordinarily the interne in the hospital tells us that there are tubercle bacilli or not; maybe that there are staphylococci, streptococci, pneumococci, what not. The report usually means little or nothing to us, except as to the presence or absence of tubercle bacilli; and then their absence really means nothing, unless it should be in a suspicious case that we must examine again.

However, a careful examination of the sputum will usually enable one to obtain additional facts as to diagnosis, further aid as to treatment, and hints as to prognosis. This is especially true in all chronic cases. A good many patients are walking around whose cases are diagnosed as chronic bronchitis, when in reality they are tuberculous; and if we wish to do anything for the tuberculous patient, we must make the diagnosis early.

Incipient tuberculosis, as we all know, is considered curable, while this is not true of the chronic form. When abscess and cavity formation has taken place, it is usually too late, and the responsibility rests upon us.

If we examine the sputum of one who has had a cough for a long time, say four weeks or more, we shall always find something that will enlighten us. A careful observer may not find tubercle bacilli, but he will find elastic fibers. He will also find a greater amount of albumen and an increased number of lymphocytes, which will immediately lead him to suspect that it is an incipent tuberculosis. This would lead up to the suggestion that the tuberculin reaction be employed or that physical means of diagnosis be carefully and persistently carried out until a positive diagnosis as

to the presence or absence of the malady has been arrived at.

It is, further, essential to treatment to know whether we are dealing with a streptococcus inflammation, a streptococcus bronchitis, a pneumococcus bronchitis, an influenza bronchitis, a staphylococcus bronchitis or a micrococcus catarrhalis bronchitis. This is especially true in the light of the therapeutic use of the various bacterial vaccines, of which we now hear so much and of which so much is promised. If these promises are fulfilled, it will be absolutely essential that the causative organism in every case be definitely determined.

Obviously, it is also necessary, it seems to me, to know whether there is present a chronic influenza that will tend to return, or whether we are dealing with a simple staphylococcus or a pneumococcus bronchitis that we can hope to cure permanently, and to which the patient may develop a certain immunity, an immunity that is lasting, a consideration not the case in influenza or micrococcus-catarrhalis infection.

In these last named conditions, while some degree of immunity is developed upon recovery, that state is very fleeting, and instead of a permanent immunity there is usually developed a susceptibility to recurrence. In this way we readily lay the foundation for a lowered resistance on the part of the respiratory mucous membrane, allowing the ever-present infection, like tubercle bacilli, to gain a foothold and produce the disease. We are all of us infected much more frequently with tubercle bacilli than we are wont to think or believe, and it is only because man has a natural inherent resistance to tuberculosis that we do not more of us suffer from this malady.

Hence it behooves us to aid and abet nature whenever possible, and to determine exactly what the pathologic conditions in our patients are, in order that we may successfully and intelligently cope with them. We would not expect results, we would not say, "Oh, this is a simple cold, take this medicine and you will be all right in a few days," if we knew that the sputum contained enormous numbers of influenza bacilli; neither would we be surprised when, after weeks of treatment, the patient had not entirely recovered. The symptoms may to a great extent disappear, yet there is the lingering, smoldering fire still present, ever ready to be lit up upon a moment's notice by the addition of fresh fuel.

The result—another failure due not to lack of knowledge but to neglect or carelessness.

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AXILLARY MAMMARY GLANDS.

J. D. Cantwell, Davenport, Iowa *(Journal A. M. A.)*, reports the case of a woman, aged 22, who, after delivery, suffered from swelling and pain in the axillas which caused her to keep her arms extended at right angles from her body. In each axilla was found a tumor as large as half an orange, 3 inches in diameter at the base and 1½ inches high, with an areola and nipple in the center of the dome, from which milk escaped on pressure or the use of the breast pump. These increased in size until the sixth day of the puerperium, then gradually decreased, leaving only the areola and nipple to indicate their existence on the fourteenth. He has found no case reported as symmetrical as this one, and but eight cases in which axillary glands were provided with nipples. There was no question as to the nature of the secretion in this case.

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NOSE-BLEED.

If you have a case of intractable nosebleed, try packing. Insert an ordinary condom into the nose, and pack its interior with cotton or gauze until enough pressure is secured.

CURRENT MEDICAL LITERATURE.

ETIOLOGY OF ENURESIS.

ALLAN, in *The Prescriber*, emphasizes the importance of studying the origin and causes of this condition. At the outset it should be remembered that enuresis is merely a symptom, and that every case should be thoroughly investigated for some underlying cause. It is generally customary to classify enuresis as one of the functional neuroses, but Miller has taken the bold step of including it under the diseases of the bladder in order to emphasize the fact that the condition is frequently due to local causes. With regard to causation the affection may be roughly divided into five groups: (1) genito-urinary; (2) nervous; (3) malformations; (4) general; (5) idiopathic. As regards the first the urine may be at fault: there may be hyperacidity or excessive alkalinity, or there may be bacteriuria. Inflammation of various parts of the genito-urinary tract, calculi, new growths, etc., may be responsible for the disorder. The nervous causes are very numerous and many are reflex in character, such as balanitis, vulvovaginitis, worms, etc. Malformations of the spinal cord or of the genito-urinary organs may be accompanied by urinary incontinence, and treatment in such cases is particularly hopeless. As general causes may be mentioned rheumatism, thyroid insufficiency, diabetes, etc. Still found evidence associated with rheumatism in about 5% of his cases. Williams is the great apostle of the thyroid insufficiency theory. His contention is that in many cases there is deficiency of the thyroid gland secretion, and that if carefully looked for many of these grades of thyroid degeneration will be found in these patients. Particular stress is laid on the following in this connection: (1) a persistently subnormal temperature; (2) a deficiency in height and weight; (3) abnormalities of the skin and its appendages, more especially the hair, not only of the head, but also and particularly of the superciliary region. The evidence submitted in his able and interesting brochure is certainly of a convincing character. It should be pointed out that he does not maintain that this theory holds good in every case, as some subsequent investigations would apparently have us infer. In this connection Williams also advances the theory of thyroid insufficiency as a probable cause of adenoids and enuresis is not a mere coincidence. I think this statement requires to be considerably modified. In the first place, adenoids may be present in children who do not suffer from enuresis; in 850 adenoid operation cases that have come under my notice during the past two years, not one showed incontinence of urine. Some little time ago, when I was connected with a large hospital for children, and had the opportunity of seeing many cases of enuresis, I found these two conditions associated in a small number of cases only, and the percentage of cures after removal of adenoids was infinitesimal. The last group of cases—the iodiopathic—accounts for a large number of the cases of enuresis. There are two distinct classes in this group: (*a*) those in which there is lack of tone of the external sphincter; and (*b*) those in which there is hypersensitiveness of the bladder. The above is not to be taken as a full discussion of the etiology of enuresis, but it will serve to render more clear various points in treatment which will now be dealt with.

TUBERCULOSIS OF THE PLEURA.

The *Interstate Medical Journal* remarks that there is still a radical difference of opinion as to what proportion of all pleurisies is tuberculous. The estimates range from 2.8 to 98%, the true figure being perhaps 50% (Stintzing). There can, however, be no question that pleurisy is a frequent complication of tuberculosis and usually of pulmonary tuberculosis. The physical signs of dry tuberculous pleurisy are adequately described in the textbooks and need not be discussed here. When they are poorly marked, the possibility of an intercostal neuralgia must be considered. Then it may be well to remember that, in the latter condition, the pain is aggravated by bending the body towards the affected side, while in dry pleurisy the pain becomes more severe on bending the body towards the well side. In obscure cases the hypodermic tuberculin test may throw light on the condition. Here, too, it is the focal reaction that is decisive, leading not only to an increase of the pain and of the physical signs, but usually also uncovering the site of the pulmonary tuberculosis, which till then may have remained hidden.

In pleurisy with effusion, usually also tuberculous, we have the physical signs of fluid in the chest. These are usually unmistakable in the adult, but are often ambiguous in children. The tuberculin test is of no avail in these cases, since a focal reaction will be concealed by the fluid; the X-rays, on the other hand, are of great service. To determine the nature of the exudate, some of the fluid must be aspirated and examined. A specific gravity of 1015 speaks for the presence of a transudate rather than of an inflammatory fluid. If the exudate is purely serous, the tubercle bacilli can practically never be found, either microscopically or by means of animal experiment. In serofibrinous exudates, the bacilli can usually be demonstrated, especially if the clot be dissolved by antiformin and treated in the manner before described. Finally the cytodiagnosis of Widal may prove useful. A little of the fluid is centrifugated, immediately after aspiration, spread on a slide and stained with methylene blue. If 50% or more of all cells found are lymphocytes, the fluid is probably tuberculous.

Of the atypical form of tuberculous pleurisy, the most important are diaphragmatic and interlobar exudative pleurisies. The former is characterized by severe subjective disturbance, consisting of pain low down the thorax, painful vomiting and dysphagia, with scanty objective findings. The condition may suggest an abdominal lesion. Two painful areas characterize the affection, one in the epigastrium corresponding to a point at the intersection of the sternal line with the prolongation of the tenth rib, the other in the side of the neck, corresponding to the course of the vagus nerve. In interlobar pleurisy, acute pleuritic symptoms arise, at first without objective signs, later with the appearance of a transverse band of dullness corresponding to an interlobar line. Radioscopy is here of particular diagnostic value. The exudate is often purulent and may perforate into a bronchus.

Pneumothorax is occasionally an early occurrence in pulmonary tuberculosis. Its diagnosis, while sometimes difficult, need not be discussed here. The differentiation between it and a diaphragmatic hernia can most readily be made by means of the X-ray.

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DIGITALIS IN VALVULAR LESIONS.

Taussig, in the *Interstate Medical Journal,* states that a valvular lesion of the heart, in itself, requires no treatment. This statement, perhaps, calls for some modification. If the etiological factor is syphilis, Oigaard has shown that specific treatment often produces surprisingly good results; and acute endocarditis, whatever be its cause, of course, requires most careful attention. But once the valvular lesion has become es-

tablished, no special treatment is required so long as the heart muscle is competent. The patient must merely be made to realize that he is more or less of a cripple, and that he must not call upon his heart for more than it is able to perform. At the best, however, a defective valve imposes upon the heart muscle an abnormal amount of labor. This slowly produces a degeneration of some of the muscle fibres, and sooner or later the impaired myocardium finds itself unable to respond to the extraordinary demands made upon it. The heart dilates, endeavors to make up for the feebleness of its contraction by means of an increased rate of beating, and the well-known symptom-complex of heart failure results. Our mode of treatment then must be twofold. First, we must, so far as possible, lighten the task imposed upon the weakened heart, and, secondly, we must endeavor to strengthen the muscle itself. The former is best accomplished by absolute rest in bed, by a bland diet and, if there is dropsy, by a restriction of the liquids consumed, by tapping, etc. If there is much engorgement of the right heart, venesection may be a life-saving measure. For the purpose of strengthening the heart muscle, a number of procedures may be mentioned: the precordial ice-bag, carbonated baths which are occasionally serviceable, and a long list of heart tonics. None of these, however, compares in value with digitalis. This acts, in such cases, chiefly by improving the nutrition of the heart. By its action upon the vagus centre it slows the rhythm of auricular contraction and therefore also of that of the ventricles. The result is that the heart muscle has more time to rest between each systole, and that its supply of blood through the coronary circulation, which takes place only during diastole,. becomes more adequate. The exhausted muscle-fibres slowly acquire renewed vitality, and a more or less complete compensatory hypertrophy may ensue. The directly stimulating effect of digitalis upon the heart muscle and upon the tone of the peripheral vessels doubtless plays a part, but probably a minor one. In spite of the statements of the older textbooks to the contrary, this beneficial effect of digitalis may be expected in myocardial incompetence due to a valvular lesion, no matter what the nature of the latter. The danger, for instance, of giving digitalis in aortic regurgitation is entirely illusory. Sometimes, as in certain aortic lesions or in arteriocapillary sclerosis, it may be well to combine it with nitroglycerine or some other vasodilator, but even this precaution is usually unnecessary. The main point is to give it in sufficient doses until the desired effect has been produced and then to discontinue it. The usual mistake is to give it in too small a dose. Not long ago, the writer saw in consultation a boy with badly broken compensation following a mitral leak. He sat up gasping for breath, with pulmonary edema, a big liver, albuminuria and swollen legs. The statement was made that digitalis had proved ineffective, though he had received ten drops of the tincture three time daily. The daily dose of digitalis was increased threefold, a few doses of theocin were given, and the result was all that could have been desired. Two months later he was playing about in the yard. The result in such cases will, of course, depend upon the degree of myocardial degeneration. Dead or moribund muscle-fibres can not be recalled to life no matter how much their nutrition is improved or the strain upon them lessened. This is why successive attacks of heart-failure show a steadily lessening response to digitalis. This observation was formerly erroneously interpreted as indicating that the heart gradually becomes habituated to digitalis, giving rise to the false doctrine that the drug should not be given in mild cases of myocardial incompetence, but should be held in reserve as a last resort.

THE SICK ROOM.

DIET IN DIABETES.

BASSLER, in the *New York Medical Journal,* reminds us that the symptoms of diabetes are directly or indirectly dependent upon the hyperglycemia, the grade of which is pretty accurately indicated by the amount of glucose excreted. Up to rather recent times the treatment for diabetes was to eliminate the hyperglycemia if possible, and to do this constituents of food which are most readily converted by the digestive processes into grape sugar, namely, the carbohydrates, were severely interdicted. This rule was a standard for many years, and in the majority of patients it answered fairly well. In recent years, it became noticeable to clinicians that certain patients upon this "standard diet" failed in health, lost strength, became edematous, etc. As a consequence, certain clinicians, after experimenting with restricting the diet still more, only to have the patients become worse, adopted the opposite process of adding some carbohydrate to the diet with marked benefit to the patient. The controversy then raged among the clinicians, the elimination carbohydrate men taking the stand that carbohydrate was contraindicated. Their position being right in the main, but wrong in the entirety of the subject, they lost ground, as time went on, to the more modern view, namely, to give carbohydrates to the tolerance of the patient. Taking cases as they occur in practice, the best plan to follow is to place them upon the following diet, which represents high protein and almost no starch or sugar substance:

Protein, Low Carbohydrate Diet.

Breakfast—Coffee with one and one-half ounces cream. Two eggs cooked with half ounce butter. One ounce bacon.

Luncheon—Two eggs. One ounce bacon. Two ounces lamb chops (1), ham (2), beefsteak (3), chicken (4), or fish (5), broiled with half ounce butter. Vegetables from list with half ounce butter. Six ounces wine or one ounce whiskey.

Afternoon tea with half ounce cream.

Dinner—Any clear soup. One-quarter pound roast pork (5), beef (4), mutton (3), turkey (2), chicken (1), or lamb (1). Vegetables from list with half ounce butter. Salads with half ounce oil in dressing. One ounce cream cheese. Six ounces wine or one ounce whiskey. Demi tasse of coffee.

Each day select meats with same number.

Vegetables allowed—Asparagus, best greens, Brussels sprouts, cabbage, cauliflower, celery, chicory, cresses, cucumbers, egg plant, endive, lettuce, mushrooms, radishes, rhubarb, salsify, spinach, string beans, tomatoes, vegetable marrow.

After a number of days, say from ten to fourteen, the urine should be examined in twenty-four-hour specimens, representing at least two separate days, and comparison should be made as to the output of sugar and nitrogen with the estimation before the establishment of the diet, while the patient was still on the general one. If the output of sugar is not diminished enough, which is represented in 2% or less, or 27 grams daily output or less, or 4 grams of ammonia nitrogen or less, this diet will answer for a continued course. Should the patient lose weight and strength, carbohydrate should be added in a certain number of grams each day. For this purpose it is well to use simple rolls, which weigh about 30 grams and contain 50% starch, and therefore 15 grams of sugar-making content, for the time being, and estimations of the urine made. This giving of rolls can serve as an index to the carbohydrate tolerance of the patient, and the urine is then examined every fourth day. The quantity of rolls is then gradually increased until the point is noted that more starch substance is being taken than the patient can utilize without sugar accumulation in the blood and being represented in the urine. The number of grams of carbohydrate substance rep-

resenting the tolerance of the patient is then noted, and a selection from the subjoined list is practical and convenient. The list contains the more common articles of food in the lines mentioned and their amounts in per cent of finished bulk of the sugar content in each of them. You can roughly figure a 100 grams a day in this way; for example, a roll that would weigh an ounce (30 grams) being about 50% starch (which is the same as sugar) would represent 15 grams of sugar content.

Starch Values of Different Foods.

Breads, cakes, pies, etc.—	
Squash pie	21.7
Tapioca pudding	30.0
Mince pie	37.2
Lemon pie	37.4
Apple pie	41.7
Corn cake	47.3
Gluten bread	47.6
Brown bread	50.7
Biscuits	52.6
Doughnuts	52.6
White bread	52.8
Cream pie	54.9
Rolls, milk and water	54.9
Graham or rye bread	55.9
Buns	59.7
Wheat rolls	60.4
Marble cake	63.9
Ginger bread	64.7
Fruit cake	64.7
Crackers, Boston	
Crackers, cream of milk	
Crackers, butter	
Crackers, graham, each	69.4
Vegetables—	
Cucumbers	2.5
Celery	3.0
Spinach	3.1
Asparagus or lettuce	3.3
Brussels sprouts	3.7
Tomatoes	3.9
Cabbage	4.9
Egg plant	5.1
Pumpkins	5.2
Cauliflower	6.0
Radishes	6.6
Beets	6.7
Carrots	7.4
Turnips	8.7
Rhubarb	8.7
String beans	9.4
Onions	9.9
Squash	10.4
Green corn	14.1
Green peas	16.1
Artichokes	16.7
Green beans	22.0
Potatoes, boiled	22.3
Sweet potatoes	27.1
Lentils	58.6
Dried beans	59.1
Lima beans	67.0
Fruits, berries, etc., fresh—	
Blackberries	5.7
Strawberries	6.5
Watermelon	6.5
Muskmelon	9.3
Oranges	9.7
Pineapples	9.7
Cranberries	10.1
Raspberries	12.6
Apricots	13.4
Pears	14.2
Apples	16.6
Grapes	17.7
Prunes	18.5
Fresh figs	18.8
Plums	20.1
Bananas	22.9

All forms of dried and canned fruits run about four times as high in sugar, bulk for bulk, as the fresh.

In the very severe cases where patients manufacture sugar from even proteins and fats, we must keep them on a protein diet and perhaps use stricter diets on certain days in the week. For this purpose, "green days" and "oatmeal days" are valuable. With the employment of these diets no other foods are allowed on such days excepting those mentioned, both of which are nourishing enough to sustain the adult individual for the time being and still serve to eliminate the sugar. Alternation can be made with protein, green, and oatmeal day diets to keep the patients as well as it is possible for diets to do. The following are practical for the purpose. In the imminence of coma, green and oatmeal day diets are the safest.

Oatmeal and Green Day Diets.

Green days—Three eggs. Coffee, black. Bacon, one ounce. Any green vegetable. Any broth or clear soup. Whiskey, three ounces, or Burgundy or Rhine wine, ten ounces.

Oatmeal days—Oatmeal, eight and one-half ounces, or 250 grams. Butter, eight and one-half ounces. Eggs, seven ounces.

The oatmeal is cooked thoroughly with water for two hours and the butter and eggs are stirred in when the oatmeal is nearly done, salt being used as desired. This consists of the food taken on the oatmeal day, and it may be served as thin gruel, mush, or fried mush. Black coffee, some of the sour wines, Burgundy, or the whiskey may also be taken in moderate amounts as above specified. If the oatmeal is ground very fine in a coffee grinder it may be mixed with baking powder and very good biscuits can be made, using the butter directly upon them. Some of the oatmeal may be eaten in this way and the rest as mush.

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CARE OF THE TEETH.

Norman Roberts, in *American Medicine,* points out that *clean* teeth are of course not so *apt* to decay as dirty ones; but *strong* teeth can hardly be *made* to decay—a strong statement, but amply justified. To prevent decay by cleanliness alone, the mouth would have to be kept constantly aseptic, a practical impossibility; but strength can be secured with certainty if systematically worked for from childhood up. The obvious way to secure strength is by physiologic use, *i. e.,* by chewing something with

adequate resistance and with sufficient taste to stimulate the impulse to chew. The enormous consumption of gum shows the instinctively-felt need of civilized humanity for *more chewing*, but gum lacks resistance; what is needed is something like a fibrous root containing, and when chewed slowly yielding, a nourishing and agreeably-tasting salivary extract, preferably containing much carbohydrate (for the reason that carbohydrate more effectively than anything else physiologically stimulates the flow of the saliva and the impulse to prolonged mastication). The structure of the human teeth, and the known manner of life of many primitive peoples shows that human teeth were evolved mainly for just such use; hence they are best to be kept in condition by such use, rather than (though not at all to the exclusion of) such artificial measures as oral asepsis. Moreover, such natural use of the mouth (with the resulting long-continued flow of alkaline saliva) is far more efficient in reducing the numbers and virulence of tooth-destroying bacteria than any *practical* system of artificial oral asepsis; and the slight but sufficient individual motion of the teeth during vigorous and prolonged mastication is in the long run far more effective and less damaging than silk or toothpick in dislodging fermenting material from between the teeth—although, of course, artificial aids are not to be despised when especially indicated.

A familiar substance that meets the requirements of proper consistency and normal physiological stimulation is *licorice root*. A set of fairly strong teeth can safely break off the sticks into the proper lengths (about an inch) and soon reduce them to a fibrous coherent pulp, which on continued chewing yields the carbohydrate *glycyrrhizin* and other agreeably-flavored extractives during ten or twenty minutes' moderate chewing. If the teeth are too weak to break up the stick, it may be taken in a safer "fine-cut" *(not ground)* condition, which may be chewed as vigorously or as gingerly as desired. Besides licorice, there are doubtless many other suitable substances already known; and if there were a demand, much better ones could be provided.

The best way to use licorice for this purpose seems to be to chew a comfortable mouthful (swallowing the saliva, of course) until the sweet taste is replaced by slight astringency and the pulp begins to disintegrate and irritate the pharynx. One or two helpings after each meal is sufficient; but no harm is known to result from keeping it up for several hours a day, although, of course, the salivary glands may be depleted more or less if there is no intermission before meals. The habit may, with great advantage, be substituted for the use of tobacco; it is beneficial instead of harmful; it gives one "something to do while doing nothing;" it does not interfere with most kinds of work; and it molests no one except a few selfish and supersensitive souls who are irritated at the sight of others quietly enjoying themselves. The main drawback to its extended use by large numbers of people seems to be that it is largely controlled by a soulless trust, who mix a little good root with a great deal of bad, and who would probably boost the price out of sight if the demand were much increased.

There are obvious "medical" as well as "dental" grounds for advocating such a partial return to primitive habits of eating. Modern soft, bland foods do not stimulate the act of mastication or the secretion of saliva enough to cause the carbohydrates to be adequately digested in the stomach during the half hour or so that elapses before the hydrochloric acid becomes so concentrated as to kill the ptyalin, and digestion of carbohydrate is hence delayed until the amylopsin of the pancreatic juice reaches it in the intestine. This delay often results in fermentation and heartburn, which (in at least

my own case) is quickly relieved by chewing the licorice. The salivary glands, even in their present neglected condition, secrete much more of the starch-splitting ferment than does the pancreas, and should for every reason be given opportunity to contribute it at the proper time. Of course it would be better if the carbohydrate ration could all be taken in such form as to require prolonged chewing; and some day such will be the universal custom; but until then it will materially help to take even a small part of it in the manner described.

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APPLICATION OF WATER.

J. H. Neill, in the *Journal-Record of Medicine,* teaches that a very efficient way of applying heat by means of water locally is by its fomentation, which consists of two pieces of flannel, each the size of a quarter of a blanket. One piece is to remain dry, and the other is to be wrung out in boiling water. The dry flannel is to be laid on the part to be treated, and over this applied the wet flannel, folded to the required size. This should be done three times, either alternating with cold or ending with cold, in the form of water or ice.

Another method of applying local heat is by means of a photophore, which is an appliance containing one, two or three incandescent lights. This can be made to produce a moist or dry heat by direct application, or by the intervention of moist cloths between it and the body.

Cold compresses for the application of cold locally will be found most helpful in a case such as typhoid fever, or inflammations of the internal organs. The compress, to be effectual, should be frequently changed, interrupting at intervals of two or three hours with short fomentations. This becomes necessary on account of the continued application of cold, destroying the sensation, and eliminating the reflex effects.

The application of water by means of the sponge bath carries with it much comfort to the patient, and a lowering of the temperature. This, to be effectual, must be applied scientifically. In a case of rising temperature, the application of cold will, on account of the reaction, tend to cause a greater rise after it. Hence, to avoid the reaction, the sponging should be done with warm water, and in such a way that the evaporation will lower the temperature, thus avoiding a reaction. This is very important, as by the other means you will add to the discomfort of the patient, the automatic heat centers being prompted to activity by any sensation of cold. The sponge bath is especially useful in a case of fever, but it should be emphasized that care should be taken by the nurse in a fever case to see that the patient's feet and limbs are kept warm. Any sensation of cold is a signal to the heat centers to manufacture more heat.

The use of the normal saline solution by enema at a temperature of 110 degrees to 120 degrees in a case of shock will be found one of the most effectual means at our command to relieve that dread condition. The application of cold continuously applied to the region of the heart will also be found a most valuable therapeutic adjunct in such a case. By this latter means the heart is slowed down, and its strength increased.

The attempt of some to cure constipation by means of large enemas used continuously can not be too strenuously deprecated. The continual distention of the lower bowel by large quantities of water is anything but a desirable therapeutic procedure. In place of this, the graduated enema is much to be preferred. This consists in giving a high, thorough enema at a moderate high temperature, and gradually diminish the quantity and lower the temperature until a very small amount of water is used at a low temperature, stimulating peristaltic action rather by means of the cold than by means of the quantity. This has been

found to work admirably in the experience of your essayist.

Nothing can be more desirable than the popularizing of the use of such simple remedies in the place of many patent medicines containing so much that is detrimental to their users. A learning to use water judiciously will accomplish far more for the lay people without injury, or the contraction of a habit, than any or all of the most desirable patent medicines upon the market.

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OUTDOOR LIFE FOR CITY CHILDREN.

Friedlander, reviewing the recent literature on this subject in the *Interstate Medical Journal,* quotes Ayer, who tells of the forest school at Charlottenburg near Berlin, which was started in 1904 as an adjunct to the treatment of tuberculosis. The first schools of that kind in England and America had a similar object in view. The open-air idea now applies to anemic and badly nourished school children, and indeed it is thought that all school children would have better health if part of the school hours were spent out of doors. In such schools for healthy children the school schedule must, of course, receive first attention.

Open-air schools in cities may be located in parks, or city playgrounds, or upon the roofs of school buildings.

Questions of especial importance in such annexes to schools are such as relate to suitable provisions for elevators and fire escapes, and to protection from storms, wind, dust, sun, heat and cold.

Furthermore, if the window sashes in school rooms were removed, except in bad weather, the scholars would practically be out of doors. Williams writes that in the open-air campaign for schools in Sheffield attention was also given to the cleansing of the children, their teeth were looked after, their meals were served out of doors, and physical exercise was enforced.

It was noted that the influence of such procedures upon the parents of the children was also beneficial and instructive. Wood reported that open-air schools resulted in increase in weight and in hemoglobin and in the general physique of the children. Cope reports that Boston is endeavoring to cultivate the bodies as well as the minds of its school children, and with equal care. Thousands of deaths among children from preventable diseases would not occur if the physical development received the same care as the mental, and the ultimate result would be a higher type of citizenship. Hertz declares that problems of school hygiene should always be under the control of the boards of health. School sanatoria, open-air schools and clinics for the care of school children are demanded everywhere.

Carr speaks of the disadvantages of city life to children, both in their homes and in the schools, and pleads for open-air treatment. Opportunities for physical exercise for school children must be multiplied. Meylan endeavors to prove that abnormal city children when given the chance of the life out-of-doors improve greatly, both physically and mentally.

Symposia, like the foregoing, are of immense value in fixing upon the mind of the public the fact that the duty of government does not end with providing school accommodations and educational privileges for its children. The best ultimate results can not be expected from a child who gets no chance at the sports and games of childhood and youth, any more than from a plant which is forced in a hot house. Man, as an animal, was designed to live out of doors.

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TUBERCULOSIS.

Ichthyol has been highly recommended in the treatment of tuberculosis. Give fifteen drops of a mixture of equal parts of ichthyol and peppermint water. It may be administered in Angelica wine.

THE DOCTOR HIMSELF.

THE PHILOSOPHY OF A SCIENTIST.*

By VICTOR C. VAUGHN, M. D.,
Ann Arbor, Mich.

(Continued from October, 1912, Issue.)

DISEASE in the slums may spread to the palatial residences, and has shown the owner of the latter that the dweller in the former is indeed his neighbor. The typhoid bacillus finds its way from the squallid hut up the river into the great city, and visits the rich as well as the poor. Infection is an intruder against which locks and bolts furnish but slight protection. It comes in water, in milk, in food, in dust. It is brought by mosquito, fly or other insect. We meet infection in the street, we brush against it in the street car, and we sleep in it in the Pullman. It comes to our places of business, sits by us in restaurants, or hotel, and travels with us by both rail and water. It demonstrates the close relationship of all classes and conditions of men, and proves that no man can live to himself alone. It compels the intelligent to instruct the ignorant, and the rich to help the poor. Our knowledge of the spread of infection is the strongest factor in the socialistic movement of the day.

There is another lesson which the well-to-do should learn from science. The man who employs labor should know that the efficiency of the laborer depends upon the conditions under which he lives. His wages should be sufficient to provide for himself and those dependent upon him enough wholesome food to eat, proper housing, proper clothing, means of education for his children and some rational recreation. Many of the captains of industry have amassed great fortunes by giving their employes a minimum wage, compelling them to live in squallor and on a starvation diet. Some of these capitalists have distributed large sums thus secured in charities, and have hoped by these gifts to be known as great philanthropists. The time is fast coming when wealth thus accumulated will be regarded as unjustly secured. It is better to pay a living wage to every workman than to distribute money obtained through the necessities of the poor in charity. Were justice more evenly and honestly practiced by employers in the business world, there would be less need of charity. I feel very strongly on this point. No man would think of running a costly machine or expect to get the highest efficiency out of it except under the most favorable conditions. He knows that low-grade fuel results in low-grade work, and he recognizes the fact that proper lubrication is essential. He knows these things and employs his knowledge in working his engines, and he too often apparently forgets that the human body is a machine, the most complicated, and under favorable conditions the most efficient one in the world.

I believe in the ascent of man from the lower forms of animal life, and we need not look back very far to see the low level from which he has climbed. Indeed, we need not look back at all. The mass of mankind even in the civilized world is diseased, ignorant and immoral. We say that this is an enlightened age, and that we live in a civilized land, all of which is true, but enlightenment and civilization are relative terms and cover widely different conditions. Physical health has been improved in the past century. Epidemics have been held in abeyance by scientific agencies. The average life has been prolonged and the material conditions have been greatly advanced. Learn-

*A popular lecture given in the summer school at the University of Michigan, July 2, 1912.

ing is gradually extending its boundaries, and productive scholarship is reaping rich harvests, to the great benefit of the race. Scholasticism no longer dominates our educational institutions, and research is busy clearing away the jungles and draining the swamps of ignorance and superstition. Man is appreciating his moral obligations more fully than he has ever done in the past. All these things are true, but disease still takes a heavy toll; ignorance still opposes advance, and moral tyrannies are still practiced. When we look down into the depths from which man has climbed, even since historical records began, and where many of our kind still linger, we shudder, but when we look up to the heights to which he may still go, we are filled with hope and joy. Then when we realize that each one may contribute to the progress of the race, the problem of life impresses upon us a hopeful seriousness, and a buoyant determination that though the task be great it is one well worth the effort.

Men are mortal, but man is immortal. The individual has only an ephemeral existence, but the germinal cell continues through all generations. The somatic man constitutes the temporary environment of the germ cell, and it is fortunate that the former has only a slight influence on the latter, but it is this slight influence which, multiplied through many generations, becomes the great and central moving force of evolution. This individual influence on the race is not confined to the direct line, but a man through his words and deeds may give direction to the growth of his neighbor, and on those to come from that neighbor. With this understanding, life is ennobled and impregnated with a divinity of which no religion has dreamed. It shows the brotherhood and interdependence of all men. It makes of the individual a unit, and an important factor in the great drama of creation. It makes the individual conscious of his duties and arms him with the means to perform them. It gives to the individual worth and dignity far beyond that conferred upon him by those philosophies the central doctrine of which is the hope of future reward, or the fear of future punishment. It is a practical, working philosophy which, when thoroughly understood and practiced, will bring peace, good will and brotherly love to all peoples of the earth. It does not lead to an imaginary heaven with streets paved with gold and precious stones, but it will bring to the earth and all that dwell therein a life of joy and righteousness.

The philosophy of science concerns itself with this world and with this life. It reaches every condition of life. It should pervade all our notions and influence all our actions. It should determine our rules of conduct. It should stimulate the individual in making the most possible out of himself. It teaches the necessity of keeping the body in the most perfect condition, and that a sound mind is found only in a sound body, because the former is only a product of the latter. Much has been said about the influence of mind on matter, while science demonstrates the influence of matter on mind, because the two are one and indivisible. The individual who abuses his body commits a sin not only against himself, but against the race of which he is an individual unit. The man who takes a material advantage over a fellow debases himself and sins against his kind. A government which fails to secure for its humblest citizens proper and sufficient food, sanitary shelter and means for intellectual growth can not properly claim to be for the benefit of the people, nor for the advancement of the race. The failure of our own government to do equal justice to all has given rise to the present widespread discontent. Law and justice are by no means synonymous. The time will come when the unlimited inherit-

ance of property, like that of the inheritance of power, will be regarded as a relic of ignorance and barbarism. The acquisition of valuable, natural resources, such as mineral deposits and forests, by individuals and corporation should no longer be permitted, and those thus held should be subject to government control. No man accumulates great wealth by his own unaided effort. One buys a large tract of land which becomes highly valuable by the extension of a city, another is able to utilize a scientific discovery, in some industry, while a third finds opportunity to employ new machinery, and by these and similar means great wealth is accumulated. This is not only legitimate, but when properly done is praiseworthy. The man who adds to the world's wealth makes life less burdensome, improves the facilities of transportation, adds to commerce, opens up new and profitable industries, increases the wages of labor and does these things without oppressing those who serve him is a benefactor to his race. The time will come when great captains of industry will be counted among the heroes of the nation, but the unlimited inheritance of wealth will not be permitted. Men will build fortunes which will not be employed to debauch their children, but will go to improve the conditions of life among the people as a whole. Intelligent men among those who have amassed great fortunes are already seeing this matter in its proper light. Mr. Carnegie has announced his desire to wisely distribute his property before his death, and the late Dr. Pearsons succeeded in distributing his millions and dying poor. The conditions of life are compelling men to be brothers, and ultimately they must largely stifle out of existence the gross forms of selfishness which still are so plainly evident. The urban resident must depend upon the city for his water supply, and even the courts, so slow to progress, are beginning to recognize that the citizen has a just cause for action against the city if he or a member of his family becomes infected through the water supply. The dependence of the individual upon the community and the duty of the community to the individual are being realized now as never in the past. The relation between ignorance, poverty and squalor on the one hand and knowledge, efficiency and proper living on the other is so plainly seen that it can no longer be disregarded by those who control our governmental affairs, both general and local. The morbidity and mortality rates in the slums of some of our great cities should shame us, and since disease is always spreading from these breeding places, a selfish motive, if there be no better impulse to direct, will force municipalities to tax the rich in order to better the condition of the poor.

Man's most distinguished virtues have grown out of his worst vices. At first the strong protected himself, his dependents and his property by brute force. As his intelligence developed, he secured this protection by the enactment and enforcement of law, but now this fails and he is being driven by necessity to practice humanity toward his less favored friend. The material betterment of all classes and conditions of men is demanded by the philosophy of science, and it must and will come, if not through the agency of a wise evolution, it will be reached by more costly and less humane methods.

It will be seen that my philosophy is thoroughly materialistic. I believe that man has been evolved from lower forms of animal life, that he has advanced, slowly and laboriously, with many atavistic lapses, from the brute to a condition of comparative civilization, that he will continue along this road which he has traveled through countless generations, and that this will ultimately lead the race over the mountain tops and into the promised land of human perfec-

tion. I look for this not for the individual, but for the race, of which each is a small, but an important part. I conceive the highest duty of the individual to contribute his mite to the betterment of the whole. Science teaches that what the man thinks, says and does lives after him, and influences for good or ill future generations. To me this is a higher, nobler and greater incentive to righteousness than any hope of personal reward or fear of punishment in a future life. I believe that this is a glorious world, full of great opportunities to the individual, and of unlimited promise of development in the race. Life carries in itself the highest duties, the performance of which should not be regarded as tasks to be shirked if possible, or to be done reluctantly, but to be carried on with a spirit of thankfulness that it has fallen to the lot of the individual to be a participant in the great and glorious work of contributing to the uplift of the race. To widen the domain of knowledge, be it ever so little, to abate disease, to lessen pain and suffering, to decrease the burden of poverty, to brighten and ennoble the lives of others, to harness the forces of nature and make them subservient to man's will and contributory to his happiness, to increase the productiveness of the soil, to make man more considerate of his fellow, to appreciate and perform his duties, these are some of the things that science has done and is doing. To be even an humble and unknown worker in the great army of men who are doing these things is a privilege which should make glad the heart of any man.

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THE WOMAN MILITANT.

The *Charlotte Medical Journal* discusses the suffragette question from the biological standpoint, and reminds us that in the most remote annals of history we find woman a creature subservient to the will of man; this condition was dependent upon competitive physical effort and in this unequal contest the superiority of the man was paramount, as at this and succeeding periods we find her both as a bearer of children and as a toiler in the fields; as the light of civilization progresses we find her isolating in a realm more compatible with her created and creative capacities, and in proportion to her selective isolation has her power increased.

Today we find her in better advantages than ever before or than man ever enjoyed—not in given cases, but in generalities.

She is, as a rule, not the bread winner, but the conservator. The conservator and the director and the educator of the forces of nations yet to be—children. And with this grand but heavy responsibility devolving upon her alone, we find her fighting to acquire and maintain positions and conditions for which not only nature has not qualified her, but for over a prolonged period of time she would be physically unable to maintain.

That woman whose grace, attainments, and influence has been, and is, such a power should seek strange fields of effort which in the evolution of the process can only mean a reversion to the same equality (?) that in primeval times made her a toiler in the field, can only be explained by a lust for added power which at best is dubious and is remindful of the fable of "The Fisherman and the Flounder."

It is not to be denied that woman is not, nor ever has been, the physical equal of man; not only this, but it is hardly remotely possible that she ever will be; the occasional exceptions to this simply proves the rule.

Anatomically, the female is slighter than the male, the points of poise are at different angles, as regards the bony framework, the distribution of fat is largely in the body of the muscle instead of between the muscles, as in the male.

All this may make for symmetry and contour, but it does not speak for

strength or endurance; added to this that woman is woman with the special organs of generation and lactation with accompanying susceptibility to external injury during gestation, during which period she is naturally inclined to quiet and, in a measure, seclusion, it would not, for these reasons alone, appear that woman is qualified to enter the more strenuous and rougher field into which by necessity (not choice), by reason of his strength, man has ben forced.

This does not question the equality of humanity, for so long as the psychic power of the mind is recognized, we can not ignore the intuitive intellectuality of woman.

Psychologically, she is possessed of greater moral courage than man, she is more tenacious to beliefs and in her affections; she is more given to emotions and mental impressions; her nervous organization is more susceptible; mentally (and physically) she is of more delicate fibre.

Her mentality is not, however, of analytical, or essentially of productive (creative) type, but by reason of her qualities and sex, she could easily be regarded as 60 per cent the proceator and conservator of life.

It is only when she repudiates the privileged responsibilities, that of domesticity and the great majesty of motherhood with which the Almighty has entrusted her, that she becomes a renegade and a parasite; and these responsibilities are not at our personal dispositions, not influenced by caprice or inclination—it is the law of nature and of God, absolute and immutable.

THE ORIGINAL "BOGY."

I wonder, asks a writer in the *Dietetic and Hygienic Gazette*, how many of us know the term "bogy" came from a gentleman named Boguet, who flourished in France in the early part of the seventeenth century? His special vocation was to find and bring to trial all who were tainted with the crime of sorcery, and with the exercise of his duties he caused such a panic among the populace that his name, Anglicized, has been carried down long after the man himself is thoroughly forgotten.

It would seem, not only from the revelation of Sieur Boguet himself, but from the general statistics of witchcraft in France, that sorcerers swarmed in every town, village and hamlet, until it became a very difficult thing to say who was a sorcerer and who was not. Every accident that happened, no matter how intelligible the cause, was ascribed to the malefic influence of sorcery. A hailstorm that beat down the corn, a river that overflowed its banks, a fire that burnt down a cottage, a murrain that ravaged a farm yard, a casual personal injury or sickness—anything and everything that appertains to the common lot of suffering—was at once ascribed to witchcraft. It was something, the ignorant multitude thought, to revenge the misfortune by which they were visited on others—a simple accusation sufficed, and the annals of the law show that it was not often withheld. Under these circumstances, the Sieur Boguet found quite enough to do. That he did not eat the bread of idleness is abundantly manifest in the works he published. They are comprised in a thickish octavo volume of some four or five hundred pages.

The following is a summary of a sorcerer's code drawn up by him: "The presumption of sorcery suffices for arresting the suspected person. The interrogation of the accused ought immediately to follow the arrest, because the devil assists sorcerers by his advice while they are in prison. The judge ought carefully to watch the countenance of the prisoner, to see if he fails to shed tears, if he looks on the ground, mutters aside or blasphemes, all of which are infallible signs of guilt. Shame often

causes a sorcerer to deny his crime; therefore, it is good for the judge to examine the prisoner alone, the clerk who takes down the deposition being concealed. If the sorcerer has a companion present who also has gone to the Sabbath, he is always confused. He must be shaved to compel him to speak, and be examined by a surgeon to discover his marks. If the accused does not confess, he must be treated severely in prison and have people about him who know how to extract a confession. Torture ought to be avoided, because it is of no use with a sorcerer; however, if the judge thinks fit, he may employ it. It is a fair presumption that the crime of sorcery is hereditary; and it is allowable for the child to accuse the parent. Conflicting evidence is not to tell in favor of the accused, if its general tenor be against him. The punishment of simple sorcery is strangling at the stake before burning; loups-garous (those who change themselves into wolves) must be burnt alive. Those who are condemned on conjectural or presumptive evidence are not to be burnt, but hung."

It is difficult to determine whether cruelty or folly most prevail in this precious code, which, when it was first published, was received with vast approbation by the bar of which the Sieur Boguet was a member. He dedicated it to Daniel Romanez, an advocate at Salins. And yet there were in France at that day wise and enlightened men, both at the bar and on the judgment seat.

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IF A PHYSICIAN.

(From *Ellingwood's Therapeutist.*)

If a physician constantly expresses doubt as to the action of his drugs, how can he establish the faith of his patrons in his methods of cure?

If a physician constantly uses proprietary compounds in the treatment of disease, how can he expect to develop in himself a knowledge of exact drug action?

If a physician constantly treats general conditions, leaving the exact basic conditions to take care of themselves, how often will a cure result?

If a physician entertains prejudices against all suggestions made by any except those educated as he is, how is it possible to broaden his knowledge?

If a physician depends upon imported remedies of a synthetic character and excludes the knowledge developing in his own country, is he excusable for the extreme narrowness that follows?

If a physician who had previously studied these remedies alone should undertake to study the action of the plant drugs in their specific action, how great would be the astonishment?

If a physician who has previously studied diseases with reference to their names should undertake to study diagnosis with reference to the exact factors present in each individual condition, how would the knowledge so obtained differ from his present knowledge?

If a physician who has never previously done so would undertake to learn how to treat disease by applying an exact reliable remedy to each exact condition, what would become of his previous doubts as to the action of drugs?

If a physician should persist in this course for a protracted period, what influence would be necessary to cause him to revert to his former uncertain, unsatisfactory course?

If a physician should become convinced of the value of this course, what would become of his previous dogmas, doubts and prejudices?

If every physician should adopt an exact systematic successful method of this kind in his practice, how soon would medicine become an exact science?

If every physician who reads this will exercise his influence, will persuade some other to adopt this course, how rapidly will progress in medical advancement occur?

If a physician becomes convinced of the superior advantage of this method is he justified in keeping that knowledge to himself, for his own use and still harboring his prejudices?

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THE MAN WHO READS.

The *American Druggist* gives the following excellent characterization of the man who reads:

"The man who reads everything he can find that pertains to the work he is doing is the man who will go a long way. He will easily pass the other fellow who thinks that he can learn enough by personal experience. He will get ideas that could come to him no other way. No matter how good a head a man has, every other man thinks of things that will never enter the head of the first. Since it is manifestly impossible to come into personal contact with many other men in the profession, the next best way of getting their ideas and their methods is to read them wherever they appear in print. Books on business subjects both directly and indirectly akin to the drug store are many and valuable. The reading habit is one that every druggist may well cultivate. Is is one that will bring in actual and tangible returns in better business."

Although this was written for the druggist, it is easy to translate and refer it to other walks of life, and the physician especially is in constant need of reading if he desires to maintain and increase his efficiency.

In these modern times when medicine has become popularized and lay journals keep track of medical progress the work and the methods of physicians are checked mercilessly. It is often difficult to reply to questions of patients concerning new discoveries of which they have read and which they expect their doctor to know about, unless the latter takes time to inform himself of medicinal progress. People have a right to expect this of us and they demand it.

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WE ALL DO IT.

Breathes there a Doc with soul so dead, who never to himself hath said: "Dadburn it all! From this time on, I'll make no calls without the Spon? My ancient hoss I'll give a rest, unless I am with fees more blest. This thing of getting up at night, and riding miles to some poor Blight, without a cent to buy the feed consumed alone by my old steed, gives me a Pain.

"For years I've pandered to the whims, of half a thousand or more Slim Jims; neglected my wife and missed by the kids, getting my fees in only small dribs. From now on my work will be wholly cash, and I'm through with the helping of poor white Trash." * * *

But at 2 a. m. the door-bell sounds, and you're out on your feet in a couple of bounds. "Hurry up, Doc. It's pneumonia, I guess. Move up quick if you've got to dress. I haven't the money, but I'll pay you soon—I've got some coming the first of June." You console the fellow the while you dress. The fee? Oh no, you can not press. His wife is ill, and he's come to you for help in his need —your friendship's true.

Your warm home you leave and clatter away, and when you return it is light and broad day. You have shunted the hand of the Reaper aside; man's skill and worth have been met and tried. You may get your pay, and again you may not, but just at the present it's far from your thought. Poor Doc! you are richer than thousands of men who figure their worth in bank books with a pen.

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DYSMENORRHEA.

Apioli fluidi	2 fl. drachms.
Acetanilidi	40 grains.
Chloroformi	30 minims.
Alcoholis	ad. 2 fl. ounces.

M. Sig.: Teaspoonful in water every two to three hours.

RICHELIEU FROM A MEDICAL VIEWPOINT.

The *British Medical Journal* thinks there can be no doubt that the great historical novelists have much to answer for. Mankind, as a rule, prefers to learn its history from novels, as Marlborough learned his from Shakespeare, and most people are content to accept without comment whatever is offered them in so easy and pleasant a form. Few of Thackeray's admirers, for example, either know or care that the James Stuart who figures in "Esmond" is ludicrously unlike the grave and pious husband of Clementina Sobieski; and just as Scott's marvelous portrait of Louis XI will live forever, despite the attempts of modern historians to whitewash that monarch, so Dumas's conception of the mind and character of Richelieu will probably go down to posterity as a lifelike study of a wonderfully complex nature. Certainly no reader of "The Three Musketeers" is ever likely to forget the terrible picture of the great churchman who for a few years held France in the hollow of his hand; and yet the real man was a vastly different being from the implacable enemy of the gallant d'Artagnan and his companions. Dr. Cabanès, who has contributed an interesting article on the private life of the Cardinal to the May number of "L'Hygiène," shows that this man, before whom even his own sovereign trembled, was little better than a chronic invalid, worn out with constant pain, and so racked by suffering that he was obliged to transform his medical attendants into secretaries in order that even whilst transacting affairs of state he might have the means of relief close at hand. No man, it has been cynically said, is a hero to his valet; that, as Carlyle pointed out, is the fault of the valet rather than of the hero. But it is hard, indeed, for a man to be a hero to his doctors, and it is a striking testimony to the greatness of Richelieu that it is enhanced by the evidence of his medical attendants. His infirmities were so carefully concealed from the outside world that few beyond those immediately about his person guessed the reason of his fits of melancholy, his nightmares and insomnia, and the gloomy preoccupation which set him so completely apart from the rest of his contemporaries. What was put down by his enemies to the gnawings of a guilty conscience was in reality the effect of a deep-seated disease, and it was only an iron will and extraordinary powers of self-control that enabled Richelieu to rise superior to the weakness of the flesh and retain his place at the head of the state. According to Dr. Cabanès, his symptoms prove him to have been suffering from tuberculosis, the condition being aggravated by his natural tendency to gout. His ill-health seems to have begun in early youth, and his life was literally made a burden to him by constant violent headaches and attacks of fever, and the existence of hemorrhoids and abscesses which in later life made either walking or driving a veritable torture. The fever and headaches were almost continual, one returning as regularly as the other left him. The beginning of the end was ushered in by an outbreak of abscesses on the right arm, which occurred in 1642, and from the effects of which he never fully recovered. But pain and weakness had no power to damp his energy or courage; and his appetite for work remained so insatiable that he read or dictated letters even whilst his wounds were being dressed by his medical attendants. He died at the age of 57, having suffered many things from many physicians. The post-mortem examination revealed a purulent effusion in the lower part of the thoracic cavity, on the surface of the diaphragm. Richelieu is a striking example of the part played by invalids in the making of history. His manifold infirmities would have made most men give up all attempt at work, and spend their lives in attention to their

diseases. Richelieu struggled on to the end, ever busy with problems of state.

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"THROW PHYSIC TO THE DOGS."

Says the *British Medical Journal:* When Macbeth told his doctor to throw physic to the dogs he had some reason for saying so, as the man of art had just confessed that he could do nothing for his patient. When General Sheridan said he would follow the advice but for the fact that there were some valuable dogs about, he at least produced a new variant on the hoary-headed gibes at the expense of the profession. But how often do we hear of people who, apparently out of mere boastfulness, will not take the medicine ordered for them! If, as is often the case, they have not paid the doctor and have only a pious intention of doing so somewhere about the Greek Kalends, the jest may have some point, though it seems silly to seek advice which they do not mean to follow. Molière told Louis XIV that he gossiped with his physician, and that he did not take his medicine, and got well without it. But he may have taken his advice all the same. Montaigne, another of the great jesters at the art of healing, was a hypochondriac, and visited all manner of baths and so forth in search of health. Molière, at any rate, was a grateful patient, for he obtained a canon's stall for the son of his physician, Mauvillain, who is said to have given him technical help in his attacks on the faculty. There are many people, however, who will pay fees, get the prescriptions made up, and then scoff at the oracle and his counsel. This class is well represented by Turgueniev, who in one of his sketches of Russian life has drawn a picture of a compatriot whom he by accident found dying in a hotel at Dresden. He was a consumptive, and the novelist took charge of him. The patient was very cheerful, and his chief amusement was playing tricks on his doctor, to whom he used to relate all sorts of complications of his disease, the offspring of his own fancy, which the worthy German always pretended to have foreseen and announced. After the doctor had left the patient would mimic him, and throw his medicines out of the window. More than once Turgueniev suggested that it would be well to call in a doctor of high professional standing while there was still time, and told the patient that he ought not to play the fool with his disease. But the sick man only replied with jokes at doctors in general, and his own in particular. He became a little serious towards the end, saying that, after all, it was hard to die, but, recovering himself, he said: "Listen, the doctor will come tomorrow, and he will find me gone to the other world. I can imagine his look!" And the dying man tried to imitate the stupefied expression on his physician's face. A few minutes later he died. We have only quoted this narrative, which is doubtless a product of the Russian novelist's fancy, because it illustrates to an exaggerated extent a type of patient with which every practitioner is well acquainted. The sense of humor varies in man, not only in degree but in kind; did not George Eliot say that a difference of taste in jokes placed a severe strain on friendship? We would not grudge a dying man any distraction he might find during the last few and evil days of his earthly pilgrimage. But surely if the doctor is paid—a large "if," indeed—he has the best of the joke. If a patient chooses to dispense with the last rites of medicine, why should he go through the costly farce of having a minister of healing to look on at his exit from the world? This is a form of scoffing at medicine which doctors can not reasonably object to; if a patient throws physic to the dogs that is his affair. But to pay for advice that is not taken is a jest which may be a super-subtle enjoyment to some eccentric minds, but to most people it is as foolish as asking a solicitor to write a deed for the mere pleasure of destroying it. There

are, however, in the journals devoted to the propagation of health fads many indications that this kind of joke has a special effect in "disoppilating the spleen" as the older physicians used to say. It is at any rate harmless, for it hurts no one but themselves.

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COLLEGE EDUCATION.

Says Fra Elbertus (Elbert Hubbard): So long as some men who are not college bred take first place on the roster of fame, and other men who are college bred, working alongside of them, sink out of sight, most thinking men are quite willing to admit the so-called higher education is not a necessity.

Of the college men who succeed, who shall say they succeeded by and through the aid the college gave, or in spite of it?

Yet many men who win will wail: "If I only had the advantage of college training!"

If so, it might have ironed all the individuality out of them.

So I would have every man have a college education in order that he might see how little the thing is really worth. I would have every man rich that he might know the worthlessness of riches.

To take a young man away from work, say at eighteen years of age, and keep him from useful labor, in the name of education, for four years, will some day be regarded as a most absurd proposition. It is the most gigantic illusion of the age. Set in motion by theologians, the idea was that the young person should be drilled and versed in "sacred" themes.

Hence, the dead languages and the fixed thought that education should be esoteric.

This separation from the practical world for a number of years, where no useful work was done, and the whole attention fixed on abstract themes and theories, often tended to cripple the man so that he could never go back to the world of work and usefulness. He was no longer a producer, and had to be supported by tithes and taxes.

And, of course, as he did not intend to go back to the world of work and usefulness, it really didn't make any difference if he did sink into a pupa-like condition of nullity.

In the smaller colleges many instances are found of students working their way through school. My experience leads me to believe that such students stand a very much better chance in the world's race than those who are made exempt from practical affairs by having everything provided. The responsibility of caring for himself is a necessary factor in man's evolution.

And the point of this preachment lies right here—that to make a young man exempt from the practical world, from eighteen to twenty-two, is to run the risk of ruining him for life. Possibly you have taken opportunity from him and turned him into a memory machine.

There are persons who are always talking about preparing for life. The best way to prepare for life is to begin to live.

A school should not be a preparation, a school should be life.

Isolation from the world in order to prepare for the world's work is folly. You might as well take a boy out of the blacksmith shop in order to teach him blacksmithing.

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LITTLE THINGS THAT HURT COLLECTIONS.

The *Medical Council* preaches a little sermon on this topic. It points out that it is human nature to resent a formal bill for informal services. Volunteer medical service, or that casually given, may be really valuable, but it is hard to make the patient think so. Calls made because the doctor "was in the neighborhood" are not nearly so well appreciated, nor so readily paid for, as are those especially taking the physician direct to the home of his patient. A physician makes a mistake

when telling his patient of his route, or when apologetically explaining *why* he has come. Country patients spaced along the same road, at varying distances, are only too apt to "keep tabs" upon the doctor's mileage and, before he knows it, he will be seeing three or four patients and getting about the same price as he would for one. It is well to route our work in such a way as to minimize such bargaining, and to discourage it in the very beginning.

Being too much of a "brother" to women patients hurts collections. People do not like to pay relations, but they do like to frequently "run in" and take up time in gossip. Mixing up lodge or church visits with medical ones appears very neighborly, but it is very bad business policy.

Sensitiveness upon the part of the doctor may hurt his collections. Because the patient dies, or the family has been annoyed at something we did, or the neighbors have criticised our treatment may make us hesitate to urge our claims for payment. Usually some hasty word or action is forgotten by the family, and they are perfectly willing to pay us. Such cases are easy money for the collectors, who will do half our job for half of the pay. "Face the music" and make such collections yourself.

Urging a patient to take a treatment he knows very well we know little about may make him think he is conferring a favor by letting us experiment upon him, and he will not pay the bill. Defined and reliable treatment raises no such issue.

If you talk therapeutic nihilism, and then load your patient down with a young drug shop, as is common with the therapeutic nihilist, he will have opinions unfavorable to you, your drugs, medical science in general—and your bill.

OPERATIVE CORRECTION OF CONTRACTED PELVES.

Rotter, in *Zent. fur Gyn.*, proposes to achieve a permanent enlargement of the anteroposterior diameter of the pelvis by an operative reduction of the sacral promontory. This is proposed as a substitute for pubiotomy, which fails in securing such a permanent change in most cases. His procedure is as follows: With the patient in the Trendelenburg position, the abdominal cavity is opened by a low median incision and the sacral promontory exposed. The parietal peritoneum is incised longitudinally and the median sacral artery and the accompanying veins are tied off. The course of these vessels is readily exposed over the bodies of the last lumbar and first sacral vertebræ. A bone chisel about 3 cm. wide and slightly concave is then used to cut off a section of bone from 1½ to 2 cm. thick from the anterior surface of the last lumbar and the upper portion of the first sacral vertebræ, including the portion of the intervertebral ligament between them. The soft parts are sutured over this wound and the abdominal cavity is closed. He claims that the true conjugate may be increased from 1½ to 2 cm. by this operation and considers that it is applicable in all those cases in which the contraction involves the true conjugate and the latter is not less than 7 cm. The operation is proposed as a prophylactic measure and is to be employed in only those cases in which the pelvic measurements have been carefully made and the patient has been subjected to the test of previous labors under careful observation. He does not believe that the procedure is surrounded with any technical difficulties or that the removal of the sacral promontory interferes with the sustaining powers of the vertebral column, for the articular surface of the first sacral vertebræ has a diameter of at least 5.5 cm. He says that this operation will avoid the induction of premature labor, perforation, pubiotomy and Cesarean section. The procedure, however, has not as yet been tried on the living human subject.

REFRACTION.

RIGHT AND WRONG FITTING OF SPECTACLES.

By A. S. Core, M. D., Chicago, Ill.

THE advances that have been made in the surgery of the eye in the past quarter of a century have been marvelous. Up to thirty years ago, eye surgeons operated for every condition of the organ, be it cross-eye, turned-in lids or inflamed conditions, when all that was necessary in most cases was properly fitted glasses to relieve some reflex. They did not realize that a large number of these conditions could depend upon an improper adjustment of spectacles.

Those of us taking up the work after that time were taught that every condition of the eye should first be refracted, if possible, before performing an operation. If it were not possible to refract before an operation, on account of some lesion of the cornea, then certainly after the operation. This conservative surgery, or middle position, was held for years, and nearly all of the former surgery was discontinued, and better work done in a large number of conditions by the aid of glasses than formerly accomplished with the knife. Many eyes were saved and much suffering was relieved by the proper adjustment of spectacles.

The pendulum has now doubtless swung too far in the direction of glasses, and there must needs be a halt called upon the practice of the extremists.

Headache is a very common result of eye-strain, and much misery has been relieved by the proper adjustment of glasses; but it is very foolish to think a spectacle will relieve all forms of headache. An eye may have a marked error in its refractive medium and still give no trouble until a misjudged correction is attempted, and then trouble begins. In others, a very slight error will cause much inconvenience until it is wholly and accurately corrected for all that is manifest. Glasses should never be given unless demanded to improve vision or to relieve a visual reflex. The physician with experience in physiological optics, based upon a knowledge of the anatomy and physiology of the eye and its diseases, obtained in a more extensive study than is taught in a six-weeks' correspondence optical course of study, is a safer person to consult in all difficulties of the eye, whether they are optical, reflex, or the result of pathological changes than the spectacle peddler.

In order to prescribe glasses intelligently and correctly, it is necessary to make a correct diagnosis of the underlying cause of the eye trouble, and whether it is necessary to improve the vision or correct a reflex by the use of glasses, or through some systemic treatment. In these requirements the itinerant "professor" is not qualified. He frequently prescribes glasses that do not relieve the symptoms, and also fails to make the diagnosis of general disease when it is the cause of failing sight. He thus injures the eye, or permits the patient to go without treatment for a general disease that may prove fatal, but collects as much money for his imperfect service as the educated refractionist would charge for good service. He is, therefore, an unqualified and very dangerous person in all cases of eye troubles, unless it is in persons who have passed the middle period of life and need only a glass to improve the failing vision that is naturally incident to advancing years, without any systemic disturbance.

These spectacle-soliciting "professors" (?) make little or no effort to correct astigmatism by prescribing cylindrical lenses. They do all they can to sell only

spherical lenses, because they are cheaper. The majority of eyes in need of spherical lens for the correction of sight in the distance may, also, need a cylindrical lens to correct an astigmatic error in one or both eyes, and it is very seldom that spherical lenses will give perfect vision without combining them with a cylinder lens. The muscle condition and the media of the eye should be correctly determined before prescribing glasses.

Weak Accommodation.

Some people have an accommodation that is weak and is easily controlled, while others have a spasmodical contraction of the muscles that is difficult to control. There are many young people who suffer more or less with inflamed lids, a blurring of the sight, eye-ache, headache, dizziness, and sometimes nausea after continued close work, and especially is this true if the work has to do with parallel and horizontal lines.

When these conditions exist, there is an astigmatic condition that spherical lenses will not correct and their application usually renders the condition worse. In such cases it is the custom by those who recognize all the abnormal conditions to make the full correction for the cylinder lenses, as it is of more importance than the spherical lens, and then make it a common custom to advise the constant use of the lenses.

If there is no muscle trouble and only a slight degree of astigmatism, weak spheres of equal strength for each eye may be worn only for close work, if all symptoms are thus relieved. In many patients it is more satisfactory to advise the constant use of the glasses until unnecessary muscle contraction and consequent dimmed distant vision has more or less disappeared. When none of the above symptoms remain, the patient may lay aside the glasses, except for near work.

Astigmatism, when not fully corrected or glasses have not been consistently worn, has a very much stronger tendency to increase; but this chiefly depends on the individual and the work and can only be known by a fair trial. The scientific oculist does not as a matter of routine advise patients to wear glasses constantly.

The eyes of the great majority of young people people are far-sighted, and a big majority of this majority of far-sighted people have astigmatism existing in one or both eyes, requiring the use of the ciliary muscles for clear distant vision. These eyes, unless they are very far-sighted are quite astigmatic, do not necessarily suffer much distress or impairment of function in doing distant work; it is always the added strain in near work that distresses and injures the eyes and brings out that long and very annoying strain of nervous symptoms found in so many who have not adopted the use of glasses or have been improperly fitted for glasses; especially is this true if there is impairment of the general health from disease or surgical injury.

Car-Sickness.

There is a chain of symptoms that the writer has found in the examination of a large number of eye cases in past years, in which patients very often have given car-sickness as a symptom, and sometimes as the chief complaint. While car-sickness was associated in most cases with headache, blurring of the sight, and stomach trouble, the stomach trouble was given the prominence, as a disease, by the patient. The patients who experience nausea on the cars will usually experience dizziness and nausea when looking at checked or plaid goods, and also when reading music. In all of these conditions the stomach trouble was by far the most frequently blamed, and treatment for gastritis, gastralgia, dyspepsia, etc., instituted for the correction of the trouble.

In working out this problem, it has been found that a great majority of pa-

tients who suffer from car nausea, dizziness, vomiting, etc., had either simple or compound astigmatism in one or both eyes, and that the proportion was greater in those with far-sighted than with near-sighted eyes. In every case of car-sickness, it was found associated with astigmatism, with or without some other form of ocular error; and the correct adjustment of proper glasses cured the nausea and dizziness completely when the glasses were constantly worn, and improved the sight, though patients had not before observed that they did not have perfect acuity of vision.

With the use of glasses, not only did the car-sickness disappear, but with it the nauses, the vertigo, the vomiting, the headache, the blurring of sight and, better still, the stomach trouble, without subjecting that poor abused organ to dyspepsia tablets, pepsin wafers, and other disagreeable drugs. For these conditions the expense of properly adjusted glasses is less than the cost of medicine, and the pleasure and comfort from their use is better for the general health, when the error is corrected by a competent physician.

The use of glasses in close work is often made necessary independent of the condition of the eyes for the distance. When there is impairment of the general health which weakens the action of the ciliary muscle, or a partial paralysis or weakness of the nerve, which condition sometimes follows the various infectious fevers, especially that of typhoid and diphtheria, and in certain toxemias and anemias, as well as in subnormal accommodation, or asthenia from other causes.

In such cases of far-sighted conditions of low degree they might require glasses for only close work, while the person with considerable astigmatism, accompanied by all or any of the stated conditions, would undoubtedly require glasses both for the near and distant field to have comfort and perfect vision in both fields with as little inconvenience as possible. Glasses for the near work will not permit good distant vision, while glasses for distance will not permit ease in near work. Since this is true in persons that have passed the fortieth year and with those who have muscular weakness from exhaustion from other causes, the bi-focal lenses should usually be worn, instead of submitting to the annoyance and inconvenience of two pairs of spectacles.

Two Pairs of Glasses.

Too strong lenses for near work should not be given, as this discourages the return of function in the weak muscle and is more or less injurious to eyes that may partially recover their accommodation. Very few traveling spectacle peddlers will sell bi-focal glasses to a patient, as they want to sell two pairs of spectacles instead of one mounting. They have, through their selfishness, created a prejudice among people against the use of bi-focal glasses for no other reason than that of making two sales instead of one. When people say they can not use a bi-focal spectacle because they will see double or can not see to walk, you can wager they have been soaked by some sharp who succeeded in selling two pairs of glasses, and that they are carrying two cases with separate spectacles and are taking off and putting on first one, then the other, maintaining a great nuisance through sheer ignorance.

When people who have passed the middle period of life and complain only on doing close work, and their eyes are normal or nearly so for distance, glasses may be worn only for close work. In these conditions it is often of advantage to have a person wear a bi-focal glass. The main object of a bi-focal glass is to have both the far and near point always before the eyes and to enable the person to distinguish objects at any point without inconvenience. Some people who have a good far field of vision do object to the use of a bi-focal glass and prefer

to use the half-lens known as the clerical-shaped lens.

In some cases two pairs of glasses should be prescribed, for they are better for those engaged in certain vocations, whose eyes must be directed through every part of the lens, as for dentists, bookkeepers, typesetters, engravers, etc.; still, with this class they are very inconvenient and many prefer the bi-focal glass with its lesser field, and have them in the toric glass. Two pairs of glasses cost more than one pair, require more care, and must be more frequently changed, all of which necessitates the use of both hands and the dropping of the work in hand, each a case, and some place to lay one pair of the glasses while using the other. With bi-focal glasses all this is avoided as you always have them before the eyes for both fields of vision, and an investment of money in one pair of glasses, and only one pair to see after.

To avoid the use of two pairs of glasses, several substitutes have been introduced. Grab-fronts, whole or half lenses; grab-backs, whole or half lenses, serve as bi-focal both in near and distance fields of vision; but those who wish a whole lens and desire to make quick changes the whole grab-back is useful. The grab-backs are not convenient for those who are required to look upward, for the grab-back then slips backward against the eyes; or for those who are often required to stoop, since the lenses are then liable to drop out from behind the spectacle frames. Grab-fronts hang on better than grab-backs, but are more difficult to adjust; and both are objectionable because of their cosmetic effect, and can be used only with spectacles and not with an eyeglass; they require careful and frequent adjustment, and the rubbing together of the lenses scratches and mars their surface, which dims the vision.

Bi-Focals.

The most generally used substitute for two pairs of glasses—one for the near point and one for the distant point of vision—is the bi-focal glass, and this can be in the shape of spectacles or a neat-fitting nose-glass; and if cheapness is desired, the cement segment is as good as the more expensive kryptok. A person, when first adopting a bi-focal glass, is usually disappointed in their use for the first few days, but after he has become accustomed to the use of the two lenses and learns to use the muscles of the face and neck instead of depending entirely upon those of the eye, no one could persuade him to change back to the old method, provided the lenses are correct for both eyes both in the near and far fields of vision.

The patient adopting bi-focal glasses should always be given to understand at the beginning that he must be patient, and the oculist who adjusts the bi-focal combination must be very careful that the lenses do not decenter either in the near or in the distant fields. When all of these considerations have been given close attention, the bi-focal lenses, adjusted both for near and far vision, in many ways approach the ideal.

Segment lenses are easily and cheaply changed. They may be used either in a spectacle or a nose-glass frame and of any degree of durability and elegance that a particular person may desire, and at a price that is not in excess of a single pair of glasses. It all depends upon the mounting, plus the cost of two extra segment lenses.

When a person is in need of glasses, do not let him consult a spectacle peddler, but go to an oculist, who is a closer friend both to you and your patient and better able to give advice.

If you do not refract the optical errors in the eyes when necessary, you should and can direct patients to safe, honest methods and reliable service, and the oculist or the reliable resident optician

will in every instance render better, safer and cheaper service than the traveling spectacle peddler whom your patients can not find when they want a change of lenses, or for a special service.

The character of the light used should always be taken into consideration in the fitting and use of glasses for near work, also the occupation of the individual who is to use them, especially stenographers, typesetters, bookkeepers, and the many others who are compelled to work by artificial light, principally the incandescent electric or gas light. It must be remembered that in this light there seems to be an irritant quality to many individuals, due possibly to the ultraspectroscopie rays. When these conditions exist, as a rule, stronger lenses are necessary, or a tint can be given in the lens of amber or amethyst, to filter out certain rays of the spectroscope.

The accommodative power of the eye is influenced by so many factors that no hard and fast rules can be observed in the prescribing of glasses in close work. The health, temperament, vocation, habits, and the amount and character of the error in the refractive medium may affect the muscular tone, and these conditions may be of a very inconstant nature. They must always be taken into consideration in the adjustment of glasses in which there is discomfort in using the eyes for close work.

Some people are made very uncomfortable when wearing the full correction of the eyes, but experience the greatest benefit in vision and comfort when only a part of the full correction is taken up. Others will experience the greatest comfort when wearing a glass that fully or slightly overcorrects the refractive error. Still others experience no lasting benefit from any correction, owing to the inconstancy of muscular tone, depending upon the general poor health due to toxemia. This class of people require systemic treatment, or a regulation of the habits of life or of the conditions under which the eyes are used.

A lowered tone of the accommodative power of the eye requires something more than a correction of a refractive error, for in such cases there is a very great demand for a correction of the abnormality by means directed to the underlying cause of the trouble. The lowered tone of the accommodation power of the eye requires something more than the transient effect of glasses, which can aid in restoring the impaired function of the eye without first correcting the underlying cause which depends upon the condition of the general health.

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ESSENTIAL HEMATURIA.

Nelken, in the *American Journal of Urology,* believes essential or "idiopathic" hematuria to be due to some form of chronic nephritis. The cases are usually treated for stone, tuberculosis or cancer of the kidney. The lesion may, as in Albarran's case, be only as large as a millet seed. Unilateral nephritis may be the cause of the bleeding or the latter may come from one kidney in a case of bilateral nephritis. Casts and albumen are not essential in the finding of a nephritis; the presence of blood alone may be the only indication of the nephritis. A number of cases clear up without treatment. Others yield to irrigations of kidney pelvis with adrenalin chloride or nitrate of silver solutions. Decapsulation is often effectual, while some cases will yield only to nephrectomy. The operation of choice in undiagnosed bleeding from the kidney, is polar section, preferably through Broedel's line. Removal of the kidney should not be undertaken, however, before proper function tests have been made.

MEDICAL PHARMACY.

THE ELIMINATION OF DRUGS.

AN important feature of therapeutics, says the *St. Louis Medical Review,* which the text-books treat very scantily and which practitioners rarely consider in routine work is the time required for the absorption and elimination of active drugs. Our rough rule of administering doses thrice daily, before or after meals, or every hour, two, or four hours, is based on nothing at all but empiric habit. Scientifically and practically we can obtain better effects, and perhaps with less harm to the body, by gauging the intervals between doses according to our knowledge of the time required for the remedy to be absorbed and eliminated.

Some drugs are absorbed very quickly, act evanescently, and are eliminated completely in a very brief time. Others are absorbed very slowly, maintain their effect over a considerable period of time, and are slowly eliminated. For example, take amyl nitrite or the other nitrites; their absorption requires but a few seconds or three minutes at the longest when given by mouth; their effect lasts from half an hour, in the case of amyl nitrite, to about three hours, in the case of sodium nitrite; hence a dose *ter in die* is insufficient to maintain vaso-dilation. On the other hand take digitalis: a dose of the drug in any form by mouth is conceded by all authorities to require from twenty to forty hours for absorption; its effect continues then for many hours or even days; it is eliminated very slowly indeed. Giving digitalis by mouth every four hours of even three times a day invites cumulation and disastrous consequences. Combining digitalis and a nitrite in one mixture is precisely like harnessing a mule and a jack rabbit together to plow a field. The results will be doubtful.

A knowledge of the absorption time of various common drugs is of immense advantage in bedside work. Thus, in the presence of a pressing emergency one needs to know not only what drug to give, but also how best to give it and whether it will act now, an hour from now, or tomorrow afternoon. Moreover, in the handling of an alarming crisis in the course of any dangerous illness, the frequency with which the doses of various stimulants are repeated is quite as important in its bearing on the outcome as is the selection of the indicated drug itself. Simply following one dose with another at ever shortening intervals will rarely or never accomplish so much as a judicious and calm repetition of the necessary dose according to scientific knowledge of the drug's activity.

Ipecac requires, on the average, about fifteen minutes to produce emesis—and even then it may fail. Apomorphine rarely fails to act within five minutes. Copper sulphate, a grain or two given to a child in a tablespoonful of water, commonly produces almost instantaneous vomiting; its usefulness in croup, suffocative catarrh (broncho-pneumonia), and certain poisoning accidents, is not sufficiently resorted to.

Ammonium salts, aconite, and belladonna maintain the effects not longer than three hours, after which they are completely eliminated from the body. Giving them *ter in die* is spasmodic, kangaroo therapy. Aconite, given in tincture via oris is absorbed in about fifteen minutes; that is, the measurable effects show themselves after that interval. But atropine or belladonna does not act within half an hour, and is entirely eliminated within three hours, or even within two hours; thus we must repeat this drug at least once in three hours to maintain its action; poisoning from atropine is

rare; that is, fatal poisoning, because it is so rapidly eliminated.

Opium or morphine acts in twenty minutes by mouth, and in five minutes or more hypodermically. A single dose of opium requires forty-eight hours for complete elimination from the body. The frequent repetition of an opiate therefore stores up an excess in the tissues and accounts for the wretched feeling of intoxication complained of when a patient is given several doses of an opiate in one day. Opium has been found to be largely eliminated in the stomach (as dioxymorphine) and resorbed into the blood to a certain extent. This accounts for the good results of early and repeated stomach washing in opium poisoning, no matter in what way the drug is taken. Morphine acetate is much more soluble than is the sulphate, and so is the hydrochloride. A tablet triturate of the acetate dissolved in a tablespoonful of very hot water will often obviate the need of a hypodermatic injection.

Chloral hydrate is absorbed very rapidly—in five minutes sometimes. Patients should be instructed to take it only on the moment of retiring, otherwise they may fall asleep before reaching the bed, and later charge the doctor with giving them "dope." It produces some six or seven hours of very restful, natural sleep, with no more unpleasant after-effects than we see following any of the newer hypnotics. It is quite as safe, intelligently administered, as any hypnotic could well be. All one need watch in giving it are the skin and the kidneys.

Ergot, by mouth, is absorbed and acts in fifteen minutes, but its effect on the unstripped muscle fibre continues scarcely more than half an hour. In serious cases semi-hourly doses should therefore be prescribed. Giving so vital a drug every two or four hours throws open the door to disaster.

Adrenalin by mouth is said by good authorities to have no effect whatever on blood pressure. Hypodermically, or intramuscularly injected, its influence is extremely fleeting and uncertain, so far as raising blood pressure is concerned. Injected intravenously even, its effect can not be maintained without practically continuous administration. Other effects than that on the blood pressure may be obtained readily by ordinary methods of administration.

Cocaine, systemically, is a very powerful stimulant, especially in exhaustive patients taking insufficient nourishment. However given, the dose must be repeated every two hours to keep up the stimulating effect. The local effect of the drug in minor surgery is considerably shorter in duration.

The time required for various purgatives to act is too little considered by the prescriber in fixing the hour of administration and in combining different purgative drugs. Salines, taken before breakfast, usually act in about an hour. If the patient is in bed the action is slower. Jalap acts in about three hours; senna and castor oil in four or five hours; rhubarb in seven or eight hours; cascara, calomel, podophyllin and aloes in ten hours or more. The quickly acting cathartics should not be given in the evening to disturb the patient's rest. It is unscientific and impracticable to combine in one dose two cathartics which act, say, in three hours and in ten hours. Thus the C. C. pill of the U. S. P. is calculated to provoke profanity; it is better called the C. F. G. pill—the confounded griping pill. Aloes and jalap were never intended by nature to be hitched tandem. Another point about laxative pills is that the belladonna commonly employed in the pill to prevent spasm—*i. e.*, griping, can not possibly exert its influence so late as to be effectual when the aloes or other long delayed action begins. The time to give belladonna to prevent gripe is about an hour before the expected onset of the pain. Mere custom is no criterion for the progressive physician to follow.

THE VALUE OF HAMAMELIS (WITCH HAZEL).

By JOHN C. WARBRICK, M. D., M. A., Chicago, Ill., in the *Therapeutic Record.*

Hamamelis has the following synonyms, the first and common one in general use being witch hazel; then winter bloom, snapping hazel, tobacco wood, striped or spotted alder and wychwood.

From the number of these terms and from the fact that it is called witch hazel, wychwood, or witchwood, it might seem that some peculiar properties were at one time possessed by it or in earlier times that some subtle powers may have been attributed to it on account of its action in curing disease; more so, as it is a powerful astringent.

This supposition is not ill-founded, it would seem, when we consider the origin of the word, which comes from the Gr. Hama (together with) and melon, a fruit or apple, meaning flowers or fruit together on a tree.

Hence we have a liquid substance with an aromatic odor, distilled from the leaves, bark and twigs of the hamamelis virginica, which is valuable in a number of diseases and other conditions as well.

Tannin or gallic acid is obtained from it, which may account for its being a strong astringent and styptic.

A distilled extract of witch hazel is sold as a proprietary remedy in drug stores under a familiar name, owing its virtue to the presence of a small quantity of essential oil (Squire).

There is also a soap made with witch hazel, sold in almost any drug store, that is used a good deal. It is soothing and healing to the skin, as witch hazel removes epithelium and is used to some extent in skin diseases.

Lotions and creams made with witch hazel are also used a good deal, especially to apply to the face for chafing of the skin and other conditions. Witch hazel is a powerful astringent and hemostatic. It is aromatic, antiseptic, tonic and somewhat sedative and healing. It is good in passive hemorrhage, epistoris, hemoptysis, hematemesis, menorrhagia, piles, varicose veins, and is used some in gonorrhea and leucorrhea.

It is made in the form of pill suppository and ointment. It has been used a good deal for piles of the internal kind on account of its being sedative and having power as an astringent tending to check the bleeding, and it has some value in these conditions. It is used to relieve sore and bleeding gums. It is also used in rheumatic and neuralgic conditions.

In combination with other solutions, such as peroxide of hydrogen, or alone, it is used as a spray for the nose and throat in nasal catarrh and has a good deal of merit, while it is also used in cases of hay fever and in the treatment of inflammatory conditions of the ear.

The use of witch hazel is not uncommon as a household remedy for slight injuries, such as bruises, scratches or cuts, scalds, burns or even to simply use for the hands to soothe the skin at any time or to use on the face as a wash, because it has a sedative tendency to relieve pain and soreness; also to heal abrasions and to check bleeding. Some people like to use it in this way because it has a pleasant odor and is antiseptic; besides it is not injurious in any way, nor dangerous. It can be readily kept on hand for any emergency of a minor kind.

That hamamelis, or witch hazel, is valuable in bruises or sprains is beyond a doubt. Its value is partly due to the alcohol it contains and partly to the witch hazel. The alcohol is a volatile stimulant to the parts and tends to harden the skin, while the witch hazel is a soothing sedative, tending to relieve the pain, soreness and heal any abrasions; also to check any bleeding on account of its astringency. For these reasons it is an excellent thing to use in sprains.

Some men who train athletes use witch hazel entirely all over the body wherever there is any soreness, lameness or weakness, to limber up the parts and get them

in good condition, and hardly anything could be better for the purpose.

The value of witch hazel in case of sprains may be increased more by using it in hot water and applying to the parts by means of cloths dipped in the solution from time to time and left on for a few moments, using at the same time gentle friction over the surface. This may be done two or three times a day, alternating with the use of cold water or cloths to reduce the inflammation, as both hot and cold applications are valuable in treating a sprain. By the use of heat, the circulation of blood is promoted, the soreness is relieved quicker and the discoloration will soon begin to disappear.

Witch hazel, then, is valuable to use in hematemesis, hematuria, hemoptysis, intestinal hemorrhage, hemorrhoids and in many other conditions, and its value is beyond a doubt in sprains and bruises, etc.

References: Squire's Phar.; Merck's Encycl.; Brunton.

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IRON.

"Iron," says Cushny, "differs from the other heavy metals in being essential to the life of many, perhaps all, forms of protoplasm." Not only is it an ingredient of the blood of the vertebrates, but it is present in the other tissues; it is perhaps equally essential to the life of plants, it having been shown that in its absence the higher forms of vegetable life fail to form protoplasm.

It has been used therapeutically for very many years, dividing with mercury and arsenic the honors among the metallic substances used in medicine.

There are two general classes of iron combinations: the inorganic and the organic. In the former it is contained in the ordinary salt form, or as Sollman says, in "ion-form," in which it can readily be separated from its combination by electrolysis. In the organic form, the metal is a constituent part of the molecule, in a nondissociable condition.

There has been much discussion as to the relative therapeutic value of the inorganic and organic forms of iron. This discussion was given a new impetus some years ago (1885) by the introduction of Bunge's theory. He asserted that iron was absorbed from the alimentary canal only in its organic form, and that this absorption under normal conditions was sufficient to make good the loss of iron constantly from the body through the excretions. When this balance was disturbed from any cause anemia resulted. Inorganic iron, according to Bunge, was not absorbed from the intestine, but by entering into combination with the sulphurette hydrogen in the bowel with the formation of iron sulphides which were excreted, it released the organic iron (which is present in sufficient quantity in the food) which ordinarily is attacked readily by the sulphides, thus permitting of the absorption of this food-iron.

Bunge's theory had considerable vogue for a time, but later experiments have been sufficient to prove positively that the inorganic iron is absorbed directly from the intestinal canal. Only a small portion of that taken by the mouth is actually absorbed, however, the major portion being excreted by the feces as sulphide. However, a portion of the iron taken is probably absorbed, stored for a time in the liver, to be utilized by the body, or again is excreted by the stool.

As to the form in which iron is absorbed nothing certain is known. Cushny says that most preparations form chlorides in the stomach, and these are changed to albuminates in the duodenum; they may be absorbed as such, or they may be precipitated and taken up as solids by the epithelial cells. In the liver the iron is probably changed to hepatic ferratin.

In the tissues of the human body it is estimated there are from 40 to 55 grains of iron. The daily absorption from the food, according to Stockman and Greig, is from 1-12 to 1-6 grain.

Of late there has been considerable interest in the use of iron hypodermatically, but the literature upon this topic is still scanty.

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GOLDEN SEAL AND ITS USES.

Hydrastis is today probably the most expensive of vegetable drugs, but its value is attested by many competent authorities. The conditions in which it may be prescribed with benefit are well epitomized by Professor Felter, in an editorial in the *Eclectic Medical Journal*. We excerpt from this, as follows:

1. *Gastro-intestinal disorders* — The gastro-intestinal disorders benefited by hydrastis are not primary but usually secondary from a previous inflammatory condition or a progressive irritation resulting in atony of the mucous tissues with oversecretion. Its chief effect here is to allay irritation, give tone, increase the appetite and digestive power, and to correct faulty glandular action. In conditions often alluded to as chronic inflammation it is very serviceable, but in acute inflammation with arrested secretion, it is liable to increase the disability. In faulty digestion, from atony, it is a good bitter stomachic, and where there are apthous ulcerations, like all berberine bearing plants, it renders excellent service. For this purpose only coptis, berberis, phytolacca and ligustrum can be compared to it. In the so-called chronic gastritis it is exceedingly useful, and for the relief of that form of gastric catarrh following a debauch it is unexcelled. In all forms of subacute gastric distress following in the wake of alcoholic excesses it should form a prominent part of the treatment. There is no better agent in ice-water dyspepsia. Dyspepsia, with belching of putrescent gases, with weak or "gone" sensation in the pit of the stomach, small doses of hydrastis long continued render excellent service. Where chronic constipation depends largely upon an atonic state of the intestinal musculature and secretory glands hydrastis should be considered. For duodenal catarrh it is accounted one of our best remedies. Catarrh of the stomach, intestines and biliary duct have each been greatly benefited by hydrastis. Finally, in tardy convalescence from acute attacks of diarrhea or dysentery, with abdominal tenderness and occasional mucoid discharges; also in rectal disorders giving rise to fissures, ulcers, prolapsus, or eczematoid involvement, hydrastis should be given a thorough exhibition. Both for its action upon ulcerated tissues and for its control over hemorrhage this agent is one of the most useful in the routine treatment of gastric and duodenal ulcer.

2. *For mucous profluvia*—The word catarrh with most people carries with it chiefly involvement of the Schneiderian membrane, but all mucous membranes in over-action are catarrhal. A leucorrhea is as truly catarrhal as is an acute or chronic rhinitis. For catarrhal states no remedy is more generally useful than hydrastis. This is more likely to be the case the greater the muscular debility of the patient. Whether it be subacute or chronic naso-pharyngeal or pharyngeal catarrh, and whether granular or involving the follicles, or whether aphthous in character, hydrastis, both internally and locally, will do as much as medicines can do for these conditions. It is also very useful to contract hypertrophied tissues due to catarrhal discharges, as in hypertrophied tonsils and turbinates. One of the earliest uses of hydrastis, and attributed to Indian origin (Lewis and Clark, 1804), is that of a wash in catarrhal and purulent ophthalmias. It may be used where there is ulceration, purulent discharges, and trachomic granules. Besides, it is useful in both acute and chronic purulent otitis media, and

locally in eczema of the external aural canal and to relieve the irritation following the removal of inspissated cerumen.

As a local remedy for gonorrhea and in leucorrhea, in their proper stages, few agents have been more widely or successfully employed. Gleety conditions are particularly benefited by hydrastis preparations, particularly the non-alcoholic and the colorless forms. In convalescence from fevers, general debility, nervous prostration, and when night sweats are present, whether due to previous inflammatory disorders, catarrhal depletion or hemorrhages, hydrastis should be employed as a bitter tonic and stomachic to assist in restoring the normal condition.

3. *Hemorrhage*—Hydrastis is useful in passive hemorrhages, having been found of greatest service in that associated with polypi, fibroid tumors and gastric ulcer. It should be given also in mild hematuria and in those disposed to epistaxis. For acute hemorrhage it is less valuable than other agents. For the betterment of purpura hemorrhagica and hemophilia it stands in the lead among the few agents that have any effect at all upon these conditions.

4. *Skin disorders*—Eczematous conditions, particularly of the outlets of the body, are well treated with hydrastis—anal and scrotal eczema especially having been cured by it. In acne and seborrhea and eczema aggravated by or depending upon gastric debility or gastro-intestinal catarrh, hydrastis should be faithfully used for a prolonged period. While we have little faith in the effects of medicines upon cancer so far as a cure is concerned, we believe the patient's condition may be fortified by judicious tonic medication with the hope at least of retarding the ulcerative stage. We give it in such conditions as gastric carcinoma and other inoperable forms, or where the victim refuses to be operated upon. Even if such medication may be devoid of actual therapeutic effects, the fact that the patient is "doing something" gives courage to a forlorn hope. This medicine is not given to delude the patient, for every cancer patient is advised by us to have the growth removed at once, if operable. Nevertheless, we believe hydrastis prolongs life in carcinomatous conditions, and were we able to recognize a pre-cancerous stage we would give hydrastis and trifolium protense as regularly as we would food.

IODOGLYCEROLE.

Eugene S. Talbot, in the *Journal A. M. A.*, recommends the use of iodin as the best oral antiseptic. The objection to the official preparation, which contains 7% iodin in alcohol, to which is added 5% potassium iodid, is due to the fact that in frequent applications it destroys the mucous membrane of the mouth. He gives the following formula for use, which he calls iodoglycerole:

Water	2 parts.
Zinc iodid	3 parts.
Iodin (crystals)	5 parts.
Glycerin	10 parts.

He says: "As compared with the ordinary tincture of iodin, its astringent properties are greatly increased; the glycerin causes rapid absorption and the irritating effects are reduced to a minimum. The penetrating effect is remarkable. The glycerin thickens the preparation and prevents it from mixing with the saliva and running over the mouth, as the ordinary tincture will do. This preparation may be used on the gums every day, if necessary, without injuring the parts. The teeth as well as the soft parts of the mouth should be treated in like manner since all germs are destroyed. I have been able to reduce decay of the teeth in my patients in the past ten years from 30 to 40%. All patients receive this treatment before or

after each sitting." He finds this especially useful in cases with bone disease, such as caries, necrosis, osteomyelitis, and all pus surfaces. In all operations on abscess cavities it should be used before as well as after operation. The same is true as regards tooth extraction, and splendid results are obtained with it in diseased or inflamed tonsils. Care should be taken that the druggist uses the pure zinc oxid in making up the formula.

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SCARLET RED.

Scarlet red, says J. H. Fobes, in the *International Journal of Surgery,* is an aniline dye used prior to 1906 as an ingredient for paints, a laboratory stain, and for various other purposes in the arts. Since then it has proved greatly superior to all other agents in surgery for promoting the growth of epithelium on granulating surfaces.

In 1909 Fischer (Bonn) produced in a rabbit's ear a new growth of normal epithelium by the injection of scarlet oil. Cone explained this action by demonstrating that scarlet red affects the cell at its most active physiological change point—the fat noted at the point of contact of cell body and nucleus. Since then many others have experimented and some have advocated its use on the human being. Among these, to Schmieden (Berlin) and John Staige Davis (Johns Hopkins) belongs the greater credit. The latter's article in the *Johns Hopkins Hospital Bulletin,* June, 1909, is responsible for the author's interest in this substance which he began to use shortly afterwards at the Flower, Volunteer, Metropolitan Hospitals and New York Medical College and Hospital for Women.

According to Davis in a later article (July, 1911), the varieties of scarlet red are as follows:

1. Diazo-azo-benzole disulphonic acid and betanaphthol (also known as Biebrich's scarlet), ponceau, new red L, and imperial scarlet.

2. Benzene-azo-benzene-azo-beta-naphthol, also known as sudan III and cerasine red.

3. Toluene-azo-toluene-azo-beta-naphthol, also known as Fischer-Schmieden red-oil, scarlet red B oil soluble, ponceau oil.

4. Azo-beta-naphthol-monosulphonic acid, a sodium salt of xylene, known as scarlet G. R., scarlet red, brilliant orange red and orange.

Hayward, in 1909, upon investigating the scarlet red oil of Fischer and Schmieden, number three in the series, found that the beta-naphthol alone was most irritating to tissues and the amido-azo-toluol produced the best growth of epithelial cells. The latter substance is composed of sodium nitrate, orthotoluidin and hydrochloric acid and is a brown granular powder. It is the latest word in scarlet red therapy.

Davis first advocated ointments of Biebrich's red, varying from 2 to 10%, made up in boric acid U. S. P. ointment as a base. This was applied on alternate days on gauze. Some cases of poisoning ensued, as shown by pain locally and scarlet urine. These disappeared upon discontinuance of the drug.

Soon after the appearance of Davis's article, in 1909, the author commenced using scarlet red, made up in a 10% strength with boric unguent. acid. boric U. S. P. as a base, upon numerous granulating wounds, varicose ulcers, skin graft cases, burns, etc., at the clinic at the Flower Hospital. The results were uniformly excellent and the epithelial proliferation was remarkable. Since then this dressing has been employed regularly wherever epitheliation was required. Not one case of poisoning has been noted nor any discomfort whatever.

ELECTRO-THERAPY.

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H. F. CURRENTS IN ECZEMA.

CHARBONNEAU, in the *New York Medical Journal,* describes a case which baffled the shifts and turns of two skin specialists, one baby specialist, and two other physicians in general practice, for six months, was one of infantile eczema, attacking almost the entire body of the unfortunate victim, which was, all told, a most pitiful sight to behold. The scalp, together with the entire face, both hands, and lower extremities, were the parts most involved. A very active conjunctivitis complicated the eczema. The eyelids were swollen, tense, and painful, the right eye practically closed. There was constant oozing from the parts involved, with bloody incrustations covering them. The suffering and discomfort must have been intense, as the parents were compelled to carry their crying child in their arms night and day.

All attempts to subdue the disease having met with failure, the case was finally referred to me, the mother being advised to try electricity, with the assurance that it would not injure the child, but perhaps would secure some relief. After some difficulty, the mother finally succeeded in collecting a sample of urine which I requested her to do. The urine of this seven months' male infant was immediately subjected to a thorough chemical analysis, which showed the following conditions: Odorless, colorless, reaction neutral. Specific gravity, 1.002. Weight of fluid ounce, 456.60 grains; solids, 2.12 grains. Deposits of mucus. No bile, sugar, nor albumin. Percentage of urea, 0.452 grain (very low) to the ounce.

Results on net basis: Uria, .045; water, 97.00; sugar, 0.00; foreign, 1.04; albumin, 0.00; chlorine, 0.24; sulphuric acid, 0.17; phosphoric acid, 0.10; phosphoric acid with earths, none; with alkalies, none; acid, negative favoring neutral; solids, none; water 2% excess; neutrality, 60-100 fluid amount. Microscopically: Sodium urate, free in amounts; lime salts, scant.

From the foregoing it was an easy matter to perceive at once that our whole trouble took its focus in faulty metabolism, the urea alone being deficient, 80% fluid amount, and this condition favoring the same.

The system was overwhelmed with toxines, and had this condition been permitted to run along, it would most probably have led to nephritic and other serious complications.

Malnutrition, together with an alkaline urine, being in evidence, I subjected the patient to the powerful stimulating, as well as eliminative effects of the low potential, high amperage, high frequency currents, and ordered lemon juice to be given to the child, from three to four times daily, while the local manifestations were brought under control with the local application of the high potential currents, alternating this with from four to six-second exposures to the X-ray.

Improvement began after the first treatment, and a later chemical analysis showed urea being eliminated 2.25%, and the reaction acid, with corresponding gains in all channels. The high frequency currents were discontinued after ten days, and the concentrated static

wave current given instead, in order to restore general nerve vitality.

The patient slept five hours after the second treatment, and from being an apparently lifeless child, began to take interest in its surroundings. All told fourteen treatments were given, and our little patient made a full and complete recovery.

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THE CONSTANT CURRENT.

G. N. Murphy, in the *American Journal of Clinical Medicine,* relates several interesting cases in which the constant current proved a valuable and successful agent of cure. The first case reported is one of chronic endometritis, accompanied by leucorrhea and dysmenorrhea, of eighteen years' duration, in a white domestic thirty-four years old and unmarried. Says the author: I curetted and cauterized the uterus for this woman one year before I tried electricity in her case, without benefiting her in the least. This patient suffered so much during each monthly flow that she was compelled to remain in bed for several days.

The electric treatment was given with a zinc uterine electrode introduced to the fundus of the organ, attached to the positive pole of the wall-plate. The negative, a pad electrode 6x8 inches in size, was wet with a salt solution (sodium chloride) and placed on the abdomen over the uterus. The first few treatments were given with 25 to 40 *m. a.* of current, but later 50 to 75 were employed for ten minutes at each sitting. Two weeks after beginning treatment her period came on and there was some amelioration of her usual suffering. Treatment was continued three times a week for four months, and the patient was dismissed cured, menstruation occurring without pain and leucorrhea had disappeared. Treatment was completed eight months ago, and she still remains well. Electricity accomplished in this case what drugs and surgery had failed to do. With electricity the menstrual flow can be regulated to any desired degree, according to which pole is used in the vagina or uterus.

Enlarged Prostate Gland.

The second case was one of enlarged prostate gland. The patient, white, was forty-two years old, in excellent health, save the trouble named; had never had any venereal disease, and attributed his ailment to an injury to the perineum received two years before I saw him, by falling heavily on his buttocks, on the ice. When he came to me he was suffering a great deal with pain in his perineum and testicles, and occasionally had to empty his bladder with a soft-rubber catheter. He also experienced some difficulty in defecation when the stools were firm, these being molded flat like a ribbon. Examination of his urethra showed a highly sensitive condition of the prostatic portion, and a slight obstruction at the neck of the bladder. On examining the rectal orifice, the prostate gland was found so much enlarged that it almost completely filled the rectal pouch.

Treatment was given through the rectum with the Overall rectal electrode, the flat surface against the gland, with 12 to 15 *m. a.* current from the negative pole, for ten minutes; the positive electrode, a large sponge wet with salt water and crowded against the perineum between the thighs. Three treatments a week were given for ten weeks, and the patient was dismissed with a normal prostate gland and all of his old symptoms gone. This was eighteen months ago, and he is still free from any prostatic trouble. The man experienced much relief from the beginning of treatment.

A few years ago, the writer advised a man with an enlarged prostate to have it removed with the knife. He did so, and although he was operated upon by a good surgeon, he died a few months later from septicemia, as a result of the operation. All inflammatory exudates and

hypertrophic tissue can be removed with the negative pole of the constant current. Dr. G. Betton Massey, of Philadelphia, has tabulated 101 cases of fibroid tumors of the uterus which he treated with electricity, with 76 absolute cures and more or less improvement in nearly all of the remaining 25 cases. One of these tumors, he states, was larger than a full-grown head, and not a vestige of it was left after treatment.

One thing can be said of electrotherapy, and much to its credit, namely, if it does no good, it at least can do no harm if intelligently used.

Ringworm of the Beard.

Case three is one of ringworm on the bearded portion of the face. The patient, a farmer from Illinois, thirty-one years old, came to me for X-ray treatment for his trouble. The right side of his face including half of the upper lip, was a solid mass of inflamed tissue and pustules. The beard, which was very thick and half an inch long, was filled with pus secretions. His treatment had been with ammoniated mercury ointment, which gave no relief. He was forced to abandon his labors on the farm, on account of pain caused by the heat of the sun. X-ray treatment was given three times a week for four weeks, with a good deal of relief from pain, but in no other respect could I tell that he was benefited.

As the patient was now growing skeptical of any ultimate good results from the X-ray treatment, I concluded to try cataphoresis with the wall-plate. Improvising a cotton-covered electrode that could be pressed into the whole affected surface, I wetted it with a saturated solution of copper sulphate, attached it to the positive pole, and applied it to the face. A like pad electrode wet with a salt solution was placed on the opposite side of the face and attached to the negative pole, and then the current was turned on until the meter showed 55 *m. a.* In eight minutes the patient said that he could taste copper in his mouth. I then stopped treatment and asked the patient to return in a week, so I could see the result of the treatment. He did as requested, and stated that he had suffered no pain after the reaction of the last treatment. His face was dry and scaly, and no pus, the inflammation rapidly subsiding. His recovery was speedy and uninterrupted. The hair came out on his face from the X-ray treatment, but grew back again as thick as ever.

I saw this man eight months later and he was still entirely free from his ringworm. I have seen such cases come to the college clinics for months, treated by our best dermatologists, without a cure. One or two years' treatment is usually required to cure, and many are never cured.

The following are cases of malignancy, or cancer. These I treated by the ionization method originated by Dr. Massey, and the work is done as follows:

Zinc needles of any desired size, length and curve are coated with metallic mercury by first dipping them in dilute sulphuric acid and then into quicksilver. Thus coated with mercury, the needles are ready for use. One or more (according to the size of the cancer) such needle is stuck into the tumor and attached to the positive pole of the wall-plate or the ionization table, and with the dispersing electrode on some convenient portion of the body, the current is turned on sufficiently strong and long to destroy the growth and outlying cells of the disease. With this explanation of the work, I shall proceed with the details of cancer case number one so treated.

Cancer of the Neck.

A farmer, sixty-nine years old, with a cancer on his neck, just beneath and back of the ear and overlying the carotid artery. The growth was 1½x2 inches in diameter, and ulcerating. The patient being chloroformed and placed upon the operating chair, eight small needles were stuck into the growth, and 425 *m. a.* of current from the ionization table turned

on for sixty minutes, which destroyed the tissue in the growth and beyond the periphery for perhaps half an inch. The destruction of tissue is known by turning an ashen-gray or white color. The slough came away in six or seven days, but as the diseased tissue was still in evidence in the center of the growth, a second treatment was given with five needles, with 425 *m. a.* of current for twenty-five minutes. The necrosed tissue came away as it did in the first treatment, and the carotid artery could be seen to pulsate just beneath the overlying tissues, which were cancerous.

Treatment was then abandoned, as it would have been impossible to destroy the diseased tissue without fatal injury to the blood-vessel. The patient died of the disease a few months later. Had not the disease so closely encroached upon the carotid artery, this cancer unquestionably could have been cured, as the wound healed nicely where the diseased tissue was destroyed.

Cancer of the Temple.

The second case is that of a German gardener, seventy-two years old, from Clinton, Kentucky. He was treated for cancer on his right temple, near the outer canthus of the eye, which involved about half of the upper and lower lids. The lesion on the temple was the size of a silver dime, and the granular mass on the lids was nearly as large as the end of the little finger, giving the patient quite an ugly appearance.

Cocaine anesthesia was used, and two zinc needles were buried in the growth on the temple only, and 50 *m. a.* of current was turned on for thirty minutes. This necrosed the diseased tissue, which came away in a slough in four or five days. The operation was then repeated with a needle in the diseased portion of either lid for thirty minutes, when the tissue changed from a red color to an ashen-white, which showed its destruction. The patient was then allowed to return to his home, he reporting in two weeks that he was doing fine. I had him return today for inspection, and whereas the wound has healed nicely, with little deformity to the general appearance of his eyelids, there remains a very small focus of diseased tissue at the outer corner of the eye, about the size of a buckshot.

In this condition, I now present this patient to the members of this society for inspection. To those of you who have not had experience in treating cancer, this patient might seem entirely cured, but the pearly nodule which I point out is cancerous, and I shall treat him again before he returns home and destroy the small point left. I do not know of any other treatment that could have been employed in this case successfully without sacrificing the eye, which has not been injured in the least.

Cancer of the Under Lip.

Cases three and four are cancer in men, involving about one-fourth of the under lip. The needle was employed in both cases, just as described in the above case, and made good cures.

As regards the number and size of the needles used in any given case, that would depend upon the size of the cancer to be treated. A malignant growth the size of a small pea would require one needle, stuck through its base, with 15 or 20 *m. a.* for twenty minutes. A cancer of the female breast would require six or eight needles of a diameter of a small telegraph wire, six inches long, with 700 to 1,500 *m. a.* of current, for one or two hours, to accomplish destruction. I have used zinc-chloride paste in probably 200 cases of cancer, during the past fifteen years, with splendid results, but of course this agent can not be employed in the natural cavities of the body (such as the eye, ear, nose, mouth, rectum and vagina), as the needles can.

TREATMENT OF HODGKIN'S DISEASE BY X-RAY.

Herschel Harris, of Sydney, N. S. W., says, in the *Australasia Medical Gazette:*

Altogether about thirty cases diagnosed as Hodgkin's disease, have been subjected to the therapeutic effects of the X-rays, either by me, or under my supervision, during the past fourteen years.

In every case arsenic, in varying doses, had been administered beforehand, and the cases were all on the downward grade before they presented themselves for treatment. Improvement followed the rays in practically every case, although several relapsed shortly afterwards. These cases were generally of a very acute type. The most successful cases were those involving single groups of glands, and these good results varied in inverse ratio to the number of areas affected.

Perhaps my most successful result has been that of a married lady, who, about ten years ago had glands removed from both sides of her neck by an eminent Adelaide surgeon. They recurred after operation, and he then exposed the parts to the X-rays. Some improvement followed, and as she intended coming to Sydney to reside she was advised to continue the treatment with me. The glandular enlargements diminished in size and gradually disappeared, and the patient is apparently cured. I saw her a couple of months ago, and she has been free from the glandular enlargements now for nine years. The glands were examined in Adelaide and pronounced to be typical of Hodgkin's disease.

I know of several other cases diagnosed as Hodgkin's disease, which have been treated by the X-rays, and have remained well for some years. No doubt many members of this branch who have sent the cases to me can supply later details.

In several cases when the disease was generalized, although one or two localized groups disappeared, the general condition of anemia and asthenia steadily progressed. Again it was noticed that when the mediastinum was involved and consequent dyspnea followed irradiating the thorax afforded great temporary relief.

I shall briefly explain the method employed of administering the X-rays.

The rays are filtered through felt paper, leather or aluminum. I generally employ aluminum, one-third m. m., thick. With a Sabouraud pastille I give one-third of an erythema dose every second day, on three occasions, then wait for a couple of weeks, and continue the filtered doses again. The length of treatment and number of exposures varies with the progress of the case. I have also tried silver as a filter, but the results have not been superior to the aluminum.

Possibly a few of the cases have been tubercular adenitis, which we know respond admirable to X-ray treatment, but the majority of the cases treated correspond clinically with those of Hodgkin's disease, a condition generally verified by several others before being sent to me.

As these cases had generally been saturated with arsenic, this drug was discontinued in most cases, but in a few, the medical men who sent them preferred to continue with it.

Conclusions.

1. X-rays in filtered doses, properly administered, are of considerable use in cases of Hodgkin's disease. Most cases are relieved, and some have remained so for several years.

2. In the very acute cases, with marked cachexia and asthenia, their use is naturally limited.

3. When employed, thorough and correct dosage must be employed, and all the enlarged areas attacked, including spleen and liver, if they too be enlarged.

4. The rays should be tried alone, and, failing response, then arsenic may be used at the same time.

CATALYSIS.

Homer C. Bennett, in the *American Journal of Clinical Medicine*, defines catalysis as the clinical, physiological, and nutritional effects produced in tissues and organs of a body by the passage, over or through them, of electric modes.

This catalytic action is that peculiar action of electrification, or that effect which it has or exerts, upon the vasomotor nervous system by which it affects nutrition. It is the most important of all the attributes of electrification, and catalysis is the keystone of the entire arch; and upon its thorough understanding depends our success or failure in the science of the practice of electrotherapeutics.

Therapeutic Catalysis a Physiologic Process.

Catalysis, in a purely therapeutic sense, is entirely a physiological process, dependent altogether upon the definite action of all the known variations of the electric condition, by whatever name known, whether galvanic, faradic, static, high-frequency, sinusoidal, cautery, or X-ray phenomena.

We see at once from this fact how universal and far-reaching is this catalytic action, and also how necessary it is to know and understand, because there follows, in some way, either beneficial or harmful good or bad upon every application of electrification from every one of the known sources of generation and from all methods of application.

By the catalytic action, the nutrition is directly and indirectly, locally and generally affected, and by this process the stimulation, sedation, temperature, growth and function of every part of the body can be more or less accurately regulated through the vasomotor nerve supply to the part, thus controlling the circulation.

All positive applications will produce sedation, relieve pain and inflammation, and contract blood-vessels, thereby quickening circulation. All negative applications produce stimulation and dilate blood-vessels, thereby slowing the circulation.

These are the direct local effects, while at the same time there become manifest indirect general effects in remote parts.

This accelerated flow of blood will, by osmosis, hasten the removal of waste products, and at the same time replace the loss with fresh deposits, which feed the parts, making them grow. The increased blood supply also has a thermic effect, warming the cold parts and cooling the hot parts by re-establishing the normal equilibrium. This removes deposits, hypertrophies and effusions, and on the other hand nourishes and feeds atrophied and wasted and starved conditions.

You at once readily see that this nutritional effect of electrification is of the greatest importance. If we increase the nutrition of a weakened or diseased organ or tissue we assist in strengthening it and restoring it to its normal condition.

How Does Electrification Affect Nutrition?

Electrification affects nutrition by stimulating the circulation and, hence, bringing or sending more blood to the parts and providing more pabulum for the cells of the tissues. It also stimulates and assists the absorbents in their work and hastens the depuration of the tissues and organs of effete products. The direct effect upon the trophic nerves is also marked, as is the indirect nervous stimulation.

It is through the process of nutrition that the majority of chronic diseases are cured. Improve the nutrition of an atrophied part, and it grows larger. Improve the nutrition of a hypertrophied part, and it grows smaller.

Electrification appears to effect its curative results first in acting as a general tonic to the entire organism. By stimulating the circulation, the whole vegetative system seems to put on re-

newed action. Glandular secretions are stimulated, absorption is promoted, the waste of the system is carried off with greater rapidity, repair is hastened in still greater proportion. Nutrition is increased, the vital force is endowed with greater strength, and the whole well-being of the organism becomes improved to a wonderful extent.

How electrification acts — whether through its mechanical action upon all muscular tissues, or by virtue of its physiological action upon all the organs and glands of the body, or by its chemical action upon the contents of the minute cells of which the tissues are composed, or through the blending of all these combined effects—would require volumes to tell; but the fact remains that electrification will build up a reduced system, and do it more quickly than any other means.

These remedial effects are brought about in various ways, and the processes are mechanical, thermic, physical, chemical, physiologic, secretory, and absorbent.

What Are the Physiological Effects of Electrification?

The catalytic action is doubtless responsible for the results produced in the treatment of chronic exudations of the joints, glandular enlargements, cicatrices, swellings, fibrous adhesions, contusions, sprains, and so forth. The process started by the action of the mode continues for some time after the treatment has ceased.

Through proper electrical treatment we may increase or diminish or modify the action of an organ or tissue. We may affect the circulation and the absorbents, and promote secretion or excretion. This is through a physiological process.

In the same manner we may, with the proper mode and the proper method of application, produce various phenomena in the skin, we may increase the process of exudation, raise the temperature, affect the nerves of special sense, as causing flashes before the eyes or a peculiar taste and odor, and by electrizing the pneumogastric nerve increase or diminish the heart's action.

Through the effect of electrification upon the heart and upon the muscular fibers of the arteries we may affect the circulation most decidedly. We may also influence the circulation through the central and peripheral nervous system.

Through a general treatment of electrification (either mode being used) we may affect the capillary circulation and increase the flow of blood, thereby dilating the veins and producing an elevation of temperature.

Through the increase in circulation the warmth of the parts is increased, and these will usually remain at an elevated temperature for some time after the treatment.

What Are the Secretory Effects?

A mode of sufficient strength will stimulate the activity of the secretory organs.

The secretion of the mucous membranes, of the salivary glands, the stomach, liver, kidneys, and so on, may be very greatly increased by proper electrical treatments. All are capable of stimulating the secretions of all these organs, but the galvanic mode acts more powerfully and produces better results. Many times catarrh may be cured by stimulating the secretions of the mucous membranes.

We may also stimulate the menstrual flow, the secretion of milk, the flow of saliva, the generation of spermatic fluid, the action of the sweat-glands, and so on. Under their proper headings will be given directions for the correct application of the various modes in producing these conditions.

It should be understood that the benefits derived through the use of electrification, in influencing nutrition, is due partly to the indirect, as well as to the direct action of the treatment.

What Are the Absorbent Effects?

The absorbents may be stimulated through the use of the galvanic mode; and through the stimulation of circulation and also through the chemical effect—influencing the process of osmosis—we may reduce hypertrophies, morbid growths, effusions, and so on.

Electrification properly applied is the most valuable treatment known in removing thickening of the skin, enlarged joints and glands, and in many kinds of tumors.

There is scarcely a chronic disease, when treated with electrification, where we can not trace at least a part of the good results to the effects of modified nutrition. In the treatment of almost any chronic disease, always remember that electrification properly applied will stimulate the circulation, and that the increased flow of blood will bring an increased amount of nutrition; that the contractions of muscular tissues produce the same effect as massage or gentle exercise; that nutrition may be affected through chemical processes; that the processes of waste and repair may be promoted; and that the nutrition of the entire system may be improved through the indirect action as well as by the direct effect of treatment, and in that way succeed in securing a constitutional, tonic, stimulating effect.

The Mechanical, Thermic, Physical, and Chemical Effects.

The mechanical effects of electrification, as appertaining to nutrition, can be explained as being quite similar to those of massage. The faradic mode produces better mechanical effects than the galvanic mode.

The interrupted mode, being constantly opened and closed during its passage through the body, produces very much the same effect as does gentle tapping or pounding or rubbing of the parts. This communicates an effect to even the more deeply seated tissues. The corpuscles of the tissues through which the mode passes are agitated, and the beneficial results obtained are due, to a certain degree, to the endosmotic action which has been stimulated by the mode.

The static potential variation, which will be fully explained later, is very marked in this respect, as is also static vibration.

Phoresis, which will also be taken up fully further on in our study, is purely a mechanical process, and is brought about by the galvanic and the static modes and also by the X-rays; but it remains yet to be shown that it in any way is secured by faradism or the high-frequency mode.

Thermic Effects—The passage of the mode through the tissues also creates heat. This is more noticeable in using the galvanic mode, but it has been demonstrated that even mild faradic modes temporarily raise the temperature of the parts through which they pass.

A static insulation almost invariably raises the body-temperature and produces a restful feeling. The static insulation increases blood pressure, while the D'Arsonval high-frequency autocondensation mode will reduce blood pressure.

Physical effects—One of the physical effects of the passage of an electrical mode through the body is to cause transference of substances from one pole to another. The stimulation of this osmotic action depends upon the physiological rather than the mechanical effect of the mode.

Chemical effects of electrification are secured by the galvanic mode, there being very little, if any, chemical effect from the use of the faradic or sinusoidal, and none at all from the static mode.

The chemical effects of electrification are chiefly of an electrolytic nature. Many of the chemical substances of which the human body is composed may be decomposed by the action of the mode. The effects produced by what is known as catalytic action of electrical modes or by an increased absorption produced

by dilatation of the capillary blood-vessels and lymphatics, an increased capability of the tissues for imbibing fluids through osmotic processes, changes in the nutrition of nerves resulting from the stimulating and refreshing effects produced, changes produced in the molecular arrangement of tissues caused by electrolytic action and the result of the transportation of fluids from one pole to another.

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X-RAY TREATMENT OF TUBERCULOUS ADENITIS.

Bruneau de Laborie, in *Bulletins et mémoires de la Société médicale des hôpitaux de Paris,* May 9, 1912, praises highly the X-ray treatment of tuberculous lymph glands, laying stress on its certain and prompt action, its harmlessness, and the good cosmetic results it yields. Where the glandular involvement is in the early stage, with simple enlargement and increase of the lymphoid tissue, one application alone is in some instances sufficient to cause complete disappearance of the gland. Sometimes, on the other hand, the first irradiation produces further enlargement of the gland; subsequent exposures, however, bring about the usual reduction in size, and six or seven sittings, on an average, suffice to give durable results.

Where caseation has already begun, X-ray treatment often brings about rapid softening of the gland, which should be evacuated by simple puncture. In these cases the treatment is less certain in its results and necessarily of greater duration than in the incipient class, but is none the less well worth a continued trial.

Irradiations are given by the author every two weeks, except in the case of tracheobronchial adenitis, where, since the rays can be applied alternately from the anterior and posterior aspects of the thorax, weekly sittings are given. If sinuses are present the first two or three treatments are given without the interposition of a filtering screen; in all other circumstances a screen of aluminum, 0.5 mm. thick is used. The amount of rays administered is measured with Sabouraud's pastilles, four H. units at least being given, but five units never exceeded. When, after several consecutive sittings, the skin shows a slight reddening, the treatment is stopped for a month; in this way, the author finds, X-ray dermatitis may regularly be avoided. A perforated glass or leaden shield is used to protect the skin surrounding the region treated, but the opening in it must be larger than the apparent size of the gland. Twenty cases are reported in which the X-ray treatment led to a cure, in some instances over a year ago, without recurrence. Twelve others are under treatment and have shown pronounced improvement.

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HIGH FREQUENCY DESICCATION.

Clark, in the *Monthly Cyclopedia,* describes briefly the technique and in greater detail the effects of, and indications for this procedure. The desiccation spark causes dehydration of tissue and has the power to penetrate from a small fraction of an inch to one inch or even more. A growth of considerable size may be destroyed by one application, and rapid repair follows. With correct technique the procedure is not very painful; in hypersensitive individuals a local anesthetic is employed. Warts and moles are usually destroyed with one application; a dry crust at once forms, which separates and falls off in from three days to one week. In the treatment of vascular nævi, angiomata, pigmentations, and tattoo marks the results have also been satisfactory. Several cases of chronic varicose ulcers, previously resistant to treatment, healed rapidly after the exuberant granulations were desiccated. In acne the use of an attenuated spark proved very effective. Neoplasms in the bladder or rectum, as well as, in suitable instances, the larynx, may be destroyed

by desiccation. The method is also available for trachoma, dry granular conjunctivitis, corneal ulcerations, and pterygium. In superficial epitheliomata the results have been so satisfactory as to lead the author to discard all other treatment. In advanced epithelioma, where there is deep involvement, but no glandular metastasis, curettement is advised, or thorough excision, followed immediately by desiccation, and subsequently by X-ray treatment. Desiccation is recommended in carcinoma only when the operative wound can be left open, in order that the débris may find exit. In inoperable cancer of the cervix desiccation is a useful palliative measure. In cancer of mucous membranes, such as the tongue, mouth, or lip, unless seen early, desiccation should not be employed alone, because the glands are usually involved, even though they are not palpable. The correct procedure is thorough excision, followed by desiccation if the wound is left open, or by fulguration if it is sutured, and then by the X-ray.

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OPERATION IN SUPPURATIVE MENINGITIS.

Kostlivy, in *Archiv für klinische Chirurgie,* reports three cases of suppurative meningitis operated upon with favorable results in two cases, and observes that the surgeon should not hesitate to perform a radical operation in any case so soon as the diagnosis of an intracranial suppurative process is manifest. It is only by early operation in these cases that the conviction can be forced upon the internist that these cases belong as much to the surgeon as does suppurative peritonitis. By operation the mortality in the most severe cases of peritonitis can be reduced 50%, not to mention the number of patients in whom early operation will protect against these grave complications. Perhaps the same hope will be realized in cases of suppurative meningitis.

THE IMMORTAL NINE.

By Edmund Vance Cooke.

Thou who stand'st behind the plate
As the globules deviate,
With thy hands outstretched to show
Whither should the next one go,
Hail, all hail, the stony-wallness
Of thy reaching wide-and-tallness.

Thou who fling'st the twirling twist,
Steel of arm and wire of wrist.
With thine eye alert to know
Every weakness of the foe,
Hail, all hail, the deep astuteness
Of thy out-drop and in-shootness.

Thou who stand'st at first to nip
Runners in their early trip,
Thou with hand which seems a ham,
Yet as nipping as the clam,
Hail, all hail, thy deft alertness,
High up-reach and scoop-up-dirtness.

Thou of second with thy squat
Waiting for thou scarce know'st what;—
Throw of catcher, hissing grounder,
Texas-leaguer, awkward bounder,
Hail, all hail, the versatility
Of thy limber-legged agility.

Thou at third with one eye front
For the foul-intentioned bunt,
Swift and certain as a gunner
As thou nailest ball and runner,
Hail, all hail, thy timeless-lossness
Catapulting throw-acrossness.

Thou of short, whose spread is wide,
Elbows crooked and both hands thighed,
Eager on thy toes to start,
Backward run or forward dart,
Hail, all hail, the running stoopness
Stop-and-snap-it-at-one-swoopness.

Thou out in the dexter garden,
As thy muscles strain and harden,
Swift of act and sure of clinch
Needful in the hasty pinch,
Hail, all hail, the bound-to-winness
Of thy long and strong throw-in-ness.

Thou in center, fever-footed,
Yet a moment standing rooted
At the bat-crack, then upspringing
Like a hawk away a-winging,
Hail, all hail, thy glad get-over
Hasty rods of grass and clover.

Thou in left whose eye is scorched
By the constant sunbeam torched,
Glove upshaded from the habit,
Yet as swift as any rabbit,
Hail, all hail, they foul-and-flyness
Judgment of the dizzy highness.

Hail, ye Nine, ye modern muses,
Hail your hidden, slidden bruises;
Hail each memory which lingers
Round your blunt and skew-skawed fingers.
Hail each face, by this afflatus,
Hail its hue of ripe tomatoes!

—*From "Baseballogy," published by Forbes & Co., Chicago.*

THERAPEUTIC BRIEFS.

Catarrhal Laryngitis.—

Thymolis .....15 grains.
Eucalyptolis .....20 minims.
Methylis salicylatis ..... 1 fl. drachm.
Creosoti (beechwood)..... 2 fl. drachms.
Olei pini pumilionis ..... 4 fl. drachms.

M. Sig.: Inhale 2 to 5 drops from a sponge several times daily.

Ovaralgia.—

Bird, in "Bull. gén. de Thérap.," recommends:

Ext. belladonnæ .....0.3 grams.
Ipecac .....0.6 grams.

M. Ft. pill No. xx.

Sig.: Two or three pills a day.

Hypnosis.—

Bertling says that urethane is a reliable and harmless hypnotic, which may be given to children in doses from 7½ to 15 grains. It dissolves readily in water and may be given by the mouth or rectum.

Rickets.—

Pituitrin, the extract of the pituitary gland, is the latest remedy to be recommended for the treatment of rickets in children. Some form of phosphorus, perhaps as lecithin, may also be used with benefit.

Fecal Accretions.—

McCreight says, in the *Medical World*, that the best way to secure the expulsion of fecal accumulations is to break them down with abdominal massage. If this is done first a good dose of castor oil will carry them out.

Poliomyelitis.—

If a child is exposed to measles or to acute anterior poliomyelitis, spray its nose and throat with hydrogen peroxide solution. These diseases are conveyed by the nasal secretions and probably contracted at the same site.

Leucorrhea.—

The following is useful where the cervix is ulcerated:

Ichthyolis ..... 4 fl. drachms.
Iodoformogeni ..... 1 drachm.
Lanum ..... 5 drachms.
Petrolati ..... 3 drachms.

Sig.: Apply twice daily to cervix with a swab.

Vomiting of Pregnancy.—

Blodgett has recently shown that in many cases of the pernicious vomiting of pregnancy there is acetone and diacetic acid in the urine. Relief follows the use of alkalies in a number of cases reported. Try sodium bicarbonate or its combinations.

Acne Vulgaris.—

The affected region is washed daily with soap and one of the following solutions applied with a pledget of cotton: Resorcin, 0.1 to 0.5%; thymol, 0.25%; salicylic acid, 0.25 to 0.5%. Either of the following pomades is then applied:

Resorcini ..... 1 gram.
Sulphuris precip ..... 2 grams.
Saponis veridis .....20 grams.
Petrolati .....20 grams.

Or the following:

Sulphuris ..... 2 grams.
Acidi salicylici ..... 1 gram.
Tinct. benzoini ..... 1 gram.
Petrolati .....30 grams.

These preparations cause a mild degree of local irritation, which should be relieved, after an hour or two, by applying hydrated wool fat, cold cream, or an ointment containing zinc oxide or bismuth.

NOTES AND MISCELLANY.

TIME FOR PROSTATECTOMY.

BENJAMIN TENNEY, in the *American Journal of Urology*, admonishes that before the patient suffering from bladder difficulty acquires the catheter habit is the time when the operation should be taken. The residual urine at such time is apt to be about 50 c.c. or more, the daily calls to urinate are frequent and the patient is wakened once or more at night. Pain follows the failure to empty the bladder if the patient is unable to urinate when the desire comes on. This is the stage of the disease most desirable for operation for the following reasons:

1. There is no hope of spontaneous improvement and every probability that conditions will grow worse.
2. The kidneys have suffered little or none from back pressure.
3. The bladder is still ahead of the bacterial invasion.
4. The amount of material to be removed is less than it will be later and the risk of bleeding is probably less.
5. To avoid the catheter life and sepsis.
6. If the hypertrophy be malignant it is early operation which gives the best chance for complete removal.

THE ACTION OF IODIN.

No preparation has done more to refute the statements of the drug nihilist than iodin. Recognition of its great therapeutic value long ago led to painstaking efforts to produce it in a free and active state, which ultimately proved successful.

Burnham's Soluble Iodine is now known far and wide and is prescribed with untold benefit in those cases where the therapy of iodin is indicated. It is far better than the unsatisfactory iodides, more prompt and decisive in action and non-irritating to the weakest stomach.

THE INFLUENCE OF THE CHEMIST ON MODERN THERAPEUTICS.

One of the advances of modern chemistry has been to show that cod liver oil possesses more virtue than merely as a convenient means of administering fat to the patient. With a clearer understanding of its chemical construction has come a more just appreciation of the large therapeutic value of its essential qualities. Before modern chemistry had succeeded in isolating the active principles of cod liver oil, the patient whose stomach was unequal to the difficult task (a difficult task even to the normal organ) of digesting a greasy mass, was of necessity denied the advantages of this valuable agent. Unfortunately, this was too often the case because the very patient who needed cod liver oil was possessed of a defective gastric organ. It was not until the pharmaceutical chemist made a practical use of his more theoretical colleague's investigations that a preparation of cod liver oil was secured which was freer from fat and which was capable of being digested by the impaired stomach. The most popular of such cod liver oil preparations is easily Cord. Ext. Ol. Morrhuae Comp. (Hagee), which contains in palatable form the active principles of the oil, and by means of which the patient may enjoy the therapeutic advantages of the whole oil and yet be spared the distress inevitable upon taking the whole oil. Cord. Ext. Ol. Morrhuae Comp. (Hagee) has for many years been put to the severest tests, and no stronger argument in favor of its clinical value may be advanced than that those who have used it longest use it the most.—*Therapeutic Review.*

HIGH-FREQUENCY AS A THERAPEUTIC AGENT.

For years it has been known that the high-frequency electric current is superior in its germ-destroying powers to any other agent with which the medical profession has to work.

The static machine was the first electro-generating device brought out, and for many years this particular machine remained practically at a standstill as to further development. This was due entirely to the fact that the output of the static machine was not perfectly understood.

However, it was generally known that the flow of current was continuous and in one direction. Some years later it was discovered that the current was of a high-frequency nature, and since that time the development of high-frequency machines has been very rapid.

Following the static machine came the development of the transforming high-frequency system, the one object being to have a machine of higher frequency, or oscillating capacity, and one that could readily be controlled by the practitioner. The output of current of this type of machine is too great for the layman to undertake to handle, and as it has been clearly demonstrated that *it is not the quality of current that has germ-destroying powers,* it is obviously unnecessary to use a machine of that description. *In short, the less current, and the higher the frequency, the greater power to destroy germ life, and the shorter road to recovery in most cases is assured.*

The Gem Violet Ray High-Frequency Machine has an extremely high oscillating capacity and practically no current whatever, and the sensation is as smooth as velvet, while the results are most soothing and efficacious.

The *Gem Violet Ray Machine* is built in the form of a small cylinder and is self-contained. Its weight is only fifteen ounces. Its capacity is several million oscillations per second, hence its great germ-killing power. The current delivered by the *Gem* is known as "G. R." current, signifying greaf range in its health-restoring properties.

In handling the "G. R." current it is impossible to receive a burn or get a shock. The machine is well covered by insulating casing, there being no metal parts exposed, thus preventing any possibility of getting any of the current except "G. R." current through the electrode. The method of applying the "G. R." current is extremely simple.

SPRING GHOSTS.

Is it the spring, or is it you,
Calling this winter day?
Your voice is soft as April's voice,
And seems as far away.

Are you some flower or some bird,
That tries to speak to me?
Or are you some sweet tiresome ghost—
Just haunting me?

—Richard Le Gallienne.

PREVENTIVE GYNECOLOGY.

At the first indication of abnormal function in the uterine tract, prescribe the Medicated Uterine Wafer (Micajah). Its tonic and astringent properties, combined with its convenience, have led practitioners to depend upon this wafer for checking minor ailments as well as serious and complicated disorders.

HYPERACIDITY.

In case of gastric hyperacidity relief may sometimes be obtained by the use of belladonna or atropine. Olive oil also checks secretion, and bismuth subcarbonate is a valuable sedative. Non-irritating diet.

Abortive treatment of colds. Cystogen-Aperient, 2 to 3 teaspoonsful to a large glass of water, repeated every four hours, will usually abort a cold if taken as soon as the first symptoms (sneezing,

"stuffiness," etc.) are observed. After free laxative action has been obtained, Cystogen-lithia or Cystogen in powder or tablets can be substituted for the aperient form. Cystogen, in full doses, enters all of the fluids of the body and its use in the treatment of acute and chronic rhinitis, otitis media, bronchitis, etc., is as illogical as the established practice of prescribing it where genito-urinary antisepsis is indicated.

THE usefulness of good hypophosphites in pulmonary and strumous affections is generally agreed upon by the profession.

We commend to the notice of our readers the advertisement on page 9 of this number. Robinson's Hypophosphites is an elegant and uniformly active preparation; the presence of quinine, strychnine, iron, etc., adding highly to the tonic value.

OLD TOM JONES

WHISKY

A pure, high-grade. well-matured, Kentucky whisky, especially commended for medicinal and family uses. We are making a special offer to physicians of

SIX FULL QUARTS FOR FIVE DOLLARS—CASH WITH ORDER

and we will prepay express charges except as stated below. Physicians ordering from Texas, Florida and points west of Missouri River will remit four dollars and fifty cents, express charges to be paid by PURCHASER.

SIMON N. JONES CO., Dept. B, Louisville, Ky.

CONCENTRATED PROMPT POWERFUL

I-Own-A

Rheumatism and Kidney Remedy

FORMULA—Colchicum, Hyoscyamus, Rhus Tox., Chirette, Gaultheria, Potass. Iodide, Magendie's Sol. (1 min. in 10), Cactus Grand., Cannabis (½ min. Tr. in 10) Potass, Acet., Phytolacca.

DOSE—10 to 30 drops, in water.

INDICATIONS—Rheumatism, Neuralgia, Lumbago, Gout, Gravel, Stone and Kidney Troubles, and for Organic Disease of the Heart, especially Valvular disease.

We ask a trial of the I-Own-A Remedy at our expense, as we guarantee it to give marked relief within 2 to 6 hours from first dose, and particularly recommend it for chronic cases, as the more you use it, the better you become acquainted with it, the more highly you will think of it, the larger you will find to be the percentage of cases, all the requirements of which it will fully meet.

Left entirely in the hands of the profession, for prescription.

Put up in only one style, without menstruum, at retail price of $1.00. Each bottle will make a 16-ounce bottle, with each teaspoonful containing 10 drops (not minims) of the I-Own-A Remedy proper.

Professional testimonials, and samples sufficient to test it for two or three weeks, sent by mail to any PHYSICIAN upon direct request to

I. O. WOODRUFF & CO.

Manufacturing Chemists

257-9 William Street New York

The Medical Brief

A Monthly Journal of Practical Medicine.

Vol. XL. St. Louis, Mo., December, 1912. No. 12.

EDITORIALS.

WHAT SHALL THE DOCTOR READ?

WE ASSUME that our tacit premise is granted. The doctor must read something. The man of today, in any profession or business, in any trade even, who does not read is a dead one. We speak, of course, of technical reading pertaining to his work. The world moves so rapidly, competition in efficiency is so keen, data and experience amass themselves so thick and fast, that the man who would merely keep abreast of the procession in his own chosen calling, let alone get ahead in it, must perforce acquaint himself continually with what is being said and done in the world around him. And the only way to do this is to read.

The only question is, then, what shall he read? That is to say, by what course of reading shall he get the most advantage, considering all the circumstances of the case—considering, for example, that he is a busy man who can not delve very deeply into the ramifications of any one subject; that he is a conscientious man who desires, as far as in him lies, to obtain genuinely accurate and comprehensive knowledge concerning the things of his science; and, above all, that he is a practical man, whose knowledge must be in a shape that is ready to use and of a kind that really increases his efficiency in the field?

We were privileged some years ago to be quite intimately acquainted and associated with a man who in those days held the chair of medical diagnosis in one of the largest universities of the West (he now holds the full chair of medicine in the same university) and who was and is one of the ablest diagnosticians and internists that it was ever our pleasure to know. The first time this gentleman took us into his "library" we looked in vain for the usual tiers of book-shelves filled with ponderous tomes. Instead, the walls were lined with enormous pigeon-holes, each stuffed full of what looked like pamphlets and reprints. And so, indeed, they were; for when we asked our friend where his text-books were, he replied, "These are the only text-books for which I care a rap—these are *reports of actual cases.*" Asked if this were all that his library consisted of, he said, "I have one other department—a file of monographs written from time to time by men who are doing actual reearch work. What do I want further? These constitute medicine in the making. These are the sources from which text-books are compiled, and often denatured and devitalized in the process. I prefer to go to the fountain head for my information."

We would not altogether commend our friend's plan to every physician. He was, to be sure, the exceptional man, who had passed the text-book stage in a fashion that most of us can not pretend to do. Yet, in the main, his system was

sound and right, and his example holds out a profound lesson for the average man in his selection of a working library. The doctor, as a rule, fills his shelves all too much with text-books, which represent the crystallized, stereotyped, if not often obsolete, phases of medicine, and pays all too little attention to the live, dynamic aspects of medicine embodied in the current literature of the hour.

A few text-books, of course, every man should have. One good modern text-book on every major subject; or, what is perhaps better still, a trustworthy "system of medicine," whose various sections are contributed by masters of the several branches represented. Monographs—real monographs, by the men who are actually reporting on their own work, and who are qualified both to work and to report—every physician should have on every subject in which he is in any degree interested. There are not so many of them put out in the course of a year, nor are they so voluminous or so expensive but what he can easily afford to have a standing order with his bookseller to furnish them to him as they appear from the press. Their value is immense. They are the very fountain head of basic knowledge. Old President Robinson, of Wisconsin University, used to say, "Monographs are the archives from which text-books are made." If a man had, let us say for example, Erlich's own monograph on his arsenobenzol preparation for the treatment of syphilis, how much more thorough and adequate and intelligent an understanding of the matter he would have than he will get from the isolated and disjointed presentations of the subject which he will read in the text-books of medicine and surgery for the next twenty-five years. And so with all such contributions to medical literature—they furnish the reader with the most original and authoritative reports of what is being done by the great workers in special fields, in all the freshness and with all the sequence and connectedness that characterized the work itself.

And finally, and perhaps most important of all, every practicing physician should by all means keep in touch with the day-to-day, week-to-week, month-to-month progress of practical medicine through the agency of his medical journals, which are to the practitioner what the daily market reports are to the financier and banker—and more. At the meeting of the American Medical Editors' Association a few years ago, Mr. Frederick Hoffmann, the distinguished life insurance statistician, declared that life insurance actuaries derived more valuable information for the regulation of risks from current medical periodicals than from any other source, *because they represented conditions up to the minute;* and he further declared that if they were obliged to let go all but one source of information, it would not take them a moment to decide that they would relinquish all others in favor of this current medical press. If this is true in respect of the insurance companies, who are establishing bases for risks upon the results obtained by medical science, how much more important must the current medical press be to the physicians who are in the field achieving, or attempting to achieve, the results!

Strange to say, these types of professional literature which we are commending most highly to our readers are the very classes of reading matter which are the easiest and least expensive to procure. Perhaps that accounts somewhat for the neglect that has attended them. Monographs by the masters in medicine and surgery are usually small and inexpensive. Reprints of reports of cases—practice in the making—are generally sent with the compliments of the author to anyone who is interested enough to ask for them. And medical journals, for a very small annual subscription price, will furnish the reader for twelve months not only with a terse, well-edited epitome of all that is "doing" in the medical world of practice and

research, but with valuable original articles which in themselves are monographs, and usually a good deal of interesting and palatable matter of a miscellaneous character thrown in for good measure—as witness our own bright and practical BRIEF. We do not advise, however, that the BRIEF be the only journal you take. Take it, by all means; but take two or three others also—as many as you can afford. Neither you nor the BRIEF will suffer for being in their company.

* * *

PRESENT-DAY PHARMACOLOGY.

LAST month we criticised at some length and with some severity the backwardness of medical pharmacology in its purely scientific and chemical phases. It is only fair that we should present the other side of the subject, and point out that in its clinical and research aspects pharmacology has made truly remarkable progress. Indeed, from this standpoint, it may be truthfully said that in no department of medicine has there been a more consistent advance within recent years. There has been a great clarification of our ideas respecting the detailed actions upon the various functions of the animal body of a large number of genuinely important drugs. This has led, in turn, to a much greater simplicity of treatment of various affections by those younger physicians who are fortunate enough to have secured their education in the best medical schools of the present day.

The drug armamentarium of the modern, scientifically-trained physician contains but very few of the old standbys of a generation ago. With perhaps a few exceptions, the drugs which were used empirically in past years have now been discarded in favor of those which have been shown by extensive experimental study to exercise sufficient physiologic action for use in specific cases of functional derangement.

The practicing physician who is at the same time an earnest and thoughtful student can not but derive the utmost benefit from a thorough study of the results obtained by trained pharmacologists in their investigation of the mechanism by which a given drug acts upon each of the body functions. He will, moreover, be surprised to find that his materia medica becomes simplified in the proportion his knowledge of the subject expands. He will appreciate more thoroughly that a given pathological condition, from whatever cause it may arise, calls for a certain type of treatment, and that he can far more successfully treat this condition by using a drug with whose action he has been made perfectly familiar than with any or all of a series of empiricals whose stereotyped virtues have received no endorsement from the experimental work of competent observers.

For the greater part of this pharmacological advance we must, in common justice, give credit to the initiative and inspiration and actual work of our great manufacturing pharmacy houses. Almost all of these concerns maintain and operate at their own expense, and sheerly as a far-sighted factor in their broad business policy, splendidly organized departments of pharmacological research and experiment, which have done and are still doing yeoman work for the doctor in these directions—more and better work than the doctor, singly or collectively, can do for himself, because of his lack of the necessary capital and organization. Moreover, they have been turning out for us better, and ever better, pharmaceutical preparations, both as to the old-line drugs, and, what is of still more moment, in the way of improved form and structure in our therapeutic agents. For all of

which, we think, these pharmaceutical houses deserve more outspoken appreciation at the hands of the medical profession than the latter—especially in those quarters where high standards are so glibly prated of—is in the habit of giving them.

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THEOSOPHY, VIVISECTION AND VEGETARIANISM.

NOW COMES theosophy and prefers an entirely novel argument against vivisection and its fruits—especially its fruits. Novel so far as we are concerned, though it may be, and possibly is, old enough to the followers of Madame Blavatsky. It is set forth in an article appearing in the current number of *The Theosophical Path*—a most excellently edited and interesting magazine, be it said, and the article in question contains some exceedingly common-sense analysis of the vivisection controversy. It is a pity that such common sense as characterizes the first part should be spoiled by the uncommon nonsense which marks its close.

The writer of the article remarks that there has been a great deal of intemperate talk by the partisans on both sides—to which we think every sane and moderate man will assent. She continues (the writer is a woman): "The opponents seem to feel a repugnance and horror which extravagant language still leaves unsaid. The advocates, especially professional men, maintain a desperate and abnormal resistance beyond their own logic to justify." This attitude she shrewdly judges "to be the subconscious sign of a hidden, if not unrecognized, wrong and weakness." With a fairness of mind not often found in the feminine make-up, especially in that of a woman arguing against vivisection, she concedes the sincerity of both sides. "The opinions of most men," she declares, with fine dispassion, "are usually sincere and quite consistent with their own viewpoint."

She then proceeds, with equally praiseworthy acumen, to boil the argument between the pros and the antis down to two main propositions: First—Has man the moral right to sacrifice the brute race to the human, regardless of the former's suffering? Second—Has humanity been materially benefited by vivisection? It is not, she wisely points out, a case of sentimentality; rather it calls for a broad scientific survey of the relation of humanity to the lower animals, and of the results of animal experimentation.

With the first proposition we are not here concerned. The writer herself does not seem to be any too clear in her conclusions upon this point—for which we have no particular criticism, since it is a point upon which even a theosophist, let alone an ordinary individual, may well find room for latitude. It is her reasoning and position upon the second question which interests us as being altogether unique and remarkable. She does not question the actual results of experimental science in this direction. "Vivisectionists," she declares, "justly claim to have brought forward the whole line of serum therapy." She is content to leave the problem of whether serums and vaccines have really affected the mortality rates to statisticians, who, she frankly admits, have something to say for both sides, therein expressing our own opinion of statistics exactly. Assuming that they have, the real question, she insists, is "whether the result is worth the price which a just nature is already demanding?"

And what is that price? Not the time-honored, somewhat hackneyed consideration of the moral effect of the practice upon those who engage in it, and through them upon human sensibilities at large. But the "dehumanizing of the race by

vampirizing the physical force of the animals, and being vampirized in turn by their impulses." In other words, the physical, mental and moral reversion of the human to the animal type by the repeated injection of serum which has been *animalised* by carrying it through the poisoned tissues of a lower animal.

We have said that this argument is a novel one to us. We qualify the statement by saying novel only in its application to the problem of vivisection. The argument itself has a familiar ring. We have heard it many times from another source and in another cause. It is, in fact, the self-same argument which the vegetarian has urged against the eating of meat. Nor are we left in any doubt as to the identity of the proposition in its new guise; for the writer herself refers to it. "The ingestion of minerals and vegetables by man as medicine or as food," we are reminded, "results in his life-force being affected and supplemented by the force in them. * * * Thus the effects of a full meat diet are noticeable, not only physically, but the man's nature is affected, his stronger imprint blurring but not effacing the distinct type characteristics."

This argument, offered against meat eating, has but one weakness—it constitutes a very normal and rational argument in favor of meat eating. If it be true, as we suppose it is, that we grow like what we feed on, then, for our part, for the purposes and demands of human life, we had rather grow like an ox than like a turnip. Our essayist says that "in digestion and assimilation man stamps over the original type of matter the more dominant impress of his own nature, using the force thus furnished for his own activities." Well, we should imagine he would have a far more reasonable chance of stamping his nature upon a sheep than upon a cabbage. All of which may sound very flippant, but covers and expresses the profound aspect of the matter just as adequately as a long, technically-worded dissertation. We suspect the real truth is that man is so complex a creature, physically, mentally and morally, as to require nourishing and metabolizing from both vegetable and animal spheres, and from the mineral sphere to boot.

Now let us see how the argument applies to serums and vaccines. The same principle holds in pathology that holds in physiology. In some of our sicknesses it is our vegetable functions (what physiology calls our "organic" functions) that are involved; in others it is our animal functions. In still others it may be our mineral content and function. Serum and vaccine therapy is merely the artificial extension of those animal resources against disease which we possess in common with all members of the animal race. We are not borrowing animal diseases; we are drawing upon animal defenses. We are not *animalizing* the virus. The whole thing *is* "animal" from start to finish. Disease has no relation to the spiritual element in man. Surely theosophists should be the last to think so. There is no middle course in the matter. Either we must deny the existence of disease, with the Christian Scientist, and ignore it; or we must admit its purely material, animal character, in which case it is both normal and rational to recognize our relation to the lower animal kingdom, and to accept their co-operation and assistance in elaborating the animal defenses against it. So we are afraid the old argument in its new dress is no more convincing against serum therapy than it has been against the eating of meat—to anyone except the vegetarian and the theosophist.

The Pediatrician as a Dietetist.*

By M. H. P. PANHORST, Jonesboro, Tenn.

THE question of infant-feeding, like the poor, is ever with us. No doubt it always will be. So long as infants' stomachs and digestive tracts differ as they do, and mothers are unable or unwilling to nurse their offspring, so long will the problem of artificial feeding remain an undetermined, individual problem of the individual baby. Nevertheless, it can not be denied that experience does bring its helps toward something like a uniformity of solution. Especially does the biological trend of modern thought and investigation in medicine help in arriving at proximate principles. In this paper Dr. Panhorst brings out some interesting and suggestive biological points which seem to us to shed valuable light upon the vexed subject.

To laws of nature there are no exceptions. If we violate nature's laws, punishment is sure to follow.

The law of *similia similibus curantur* has exceptions; yet if studied right it becomes profitable to us, especially in pediatrics.

Also cause and effect may play an important rôle. If we see an effect we must hunt the cause, and *vice versa.* Here is where the pediatrician finds the greatest obstacle. The infant can not aid us by speech; we mentally have to ask questions and answer in the same manner, draw our conclusions and make a diagnosis.

However, it is not my intention in this scattering paper to discuss the treatment of sick babies, but the manner in which we might be able by proper diet, nursing, fresh air and water to keep the youngsters well and, if sick, restore them to health with the least amount of drugs.

While pure, fresh air and water are not foods directly, yet the oxygen in pure air plays an important part in nutrition and assimilation, for it is not so much in the quantity we eat as in the amount we assimilate, that nourishment counts. Water internally and externally aids in the elimination of toxic substances which otherwise might be retained in the system and produce disease.

We find, according to Friedewald and Van Derslice, the following per cent of food value in milk:

	Protein.	Fat.	Carbohydrates.	Caloric Food Value per lb.
Human,	2.3%	3.8%	6.2%	319
Cows,	3.5%	3.7%	4.9%	313
Sheep,	6.5%	6.9%	4.9%	503
Goat,	4.3%	4.8%	4.4%	365

We might ask why it is that human milk has such a large per cent of carbohydrate, and answer that most all young animals, especially the herbivorians, in a few days after birth begin to consume some of the food the mother eats, and by so doing gets a certain per cent of carbohydrates that the young ***human*** animal does not partake of.

But on further investigation we find the llama, the ass and the mare, all herbivorians, give about as high a per cent of carbohydrates in their milk as the human, and yet their young partake of food rich in carbohydrates very early in life. So we come to a conclusion that some facts exist in nature we know very little about and we can not satisfactorily explain.

Rubner, also Atwater, claim the following comparative caloric values:

1 grm. fat furnishes 9.1
1 grm. protein furnishes 4.1
1 grm. carbohydrate furnishes 4.1

According to Pfanndler, and also Schlossman, it requires in all individuals,

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regardless of age, about thirteen calories of food value to the square decimeter surface.

Thus we find that infants require a larger amount of calories to the body weight than adults, owing to the greater amount of radiation, there being a larger surface exposure in proportion to the weight.

According to observations made by Cohnheim, the infant in the first ninety days of life requires 55 calories to each pound of body weight, while the adult at rest only requires 17 calories to each pound of body weight.

Now, no matter how carefully we consult or even memorize the divers tablets of caloric food values, drawn and prepared by scientific men, they all, from a theoretical standpoint, look very fine. Theoretically, it requires such and such a number of calories to nourish and sustain a certain number of pounds of the body weight in any individual to sustain life. So, theoretically, we at once come to a conclusion that it is the simplest thing in the world to consult the comparative tables or charts of caloric values of food, and feed our infants or children accordingly.

I say theoretically it seems clear and reasonable, but alas! try it, put it in actual practice, and mostly we feel disappointed, especially in infant dietetics. We soon find that each individual baby or child is a law unto itself. We must study and investigate each case in order to successfully treat our little patients and always insist on regularity in hours of nursing and feeding.

Of all infant's food, its own mother's milk (that is, healthy mother's) stands pre-eminently at the head of the list. At least 75% of the infants do not require anything else as food the first six or eight months of life than the milk drawn from their mother's breast. I do not believe it advisable to employ a wet nurse, for we can not always tell what hereditary taint or hidden disease might be transmitted or communicated to our children by the wet nurse.

The other 25%, or thereabout, need something else to keep them in a growing, healthy condition and not altogether in the line of nourishment.

Sometimes the mother's milk is too rich and too abundant. In this condition what must we do? How are we to find what is needed? Of course, if we have access to a laboratory to make a chemical or microscopical analysis, it makes it easier to come to a conclusion; but most of us are not so situated, and besides many of our little patient's parents are not willing, and some not able, to defray that expense.

When we find the breast-fed infant's bowels are constantly too loose, say six to twelve or more bowel movements during twenty-four hours, yet they contain but little curd, the child looks well, seems to thrive and is constantly gaining in body weight, we can set it down the per cent of fat in this mother's milk is too high.

How can we correct this? By lengthening the time between nursing, and giving it just before nursing a little fresh water; sometimes adding two or three times a day 1-20 grain of calomel or ½ to 1 grain sodium phenol sulphonate with a little sub-nit. bismuth.

But halt! I am running into drug therapy.

Then, in other instances, notwithstanding that the child gets an abundance of breast milk, yet it cries as if it were hungry, is constipated, does not increase in body weight as it should. What is wrong here? We have an abundance of milk, such as it is, deficient in fats and proteins, causing primarily constipation, alternating diarrhea. In this patient we reverse our line of treatment, and supply the deficiency in fat and proteins by feeding three times a day ½ to 2 teaspoonfuls of top cream from a cow's

milk diluted with twice or thrice its volume of boiled water, adding a few grains of bicarbonate of sodium and chloride sodium. Some one might ask, why not dilute the cream with barley or oatmeal water? But remember as a general rule the mother's milk in these instances is rich enough in carbohydrates, but deficient in fats and proteins.

We must keep in mind that butter fats have thrice the caloric food value of the proteins or carbohydrates.

If constipation still persists, which it seldom does, give a few grains of sodium phosphate and a minim of fennel oil. If from the nature of the stools we discover that digestion is impaired, we can add to good advantage 5 to 10 drops of liquenzyme. Under this dietetic treatment this class of breast-fed infants usually improve rapidly.

As to other foods, goats' milk or asses' milk stand at the head of the list, but as we can not often procure them, we have to content ourselves with the next best, and feed modified cow's milk, namely, from 60 to 75% of fresh cow's milk diluted with 40 to 25% of barley or oatmeal water, adding a few grains bicarbonate of sodium and chloride sodium. Now and then we find an infant for whom we have to add a few grains of cane or milk sugar, but not often.

I wish to call attention to the high per cent of carbohydrates in human milk. Therefore, we should dilute cow's milk with barley or oatmeal water and so to some extent make up the deficient per cent of carbohydrate content.

Only by close observation, care and years of experience will we be able to rear the artificially-fed babies through their first years of existence. I say existence, for a certain number of bottle-fed children only exist during the first year of life.

Another factor to be considered in infant feeding is the capacity of the stomach. Ssnitkin has estimated that a baby's stomach holds about 1-100 of its weight at birth and that the capacity increases amount to about one gram a day. So, according to this author, by taking 1-100 of the initial weight at birth and by adding one gram for each day, the average amount required for each day is ascertained. But, according to other authorities, this capacity is not continued in the same ratio, for Holt and Shaw claim the stomach capacity increases faster in the first month of life than any time thereafter. On an average it is 1¼ ounce at birth, 2 ounces at four weeks, 4½ ounces at twelve weeks of age. So if the capacity increase was as great in the second and third months of life, at three months it should hold 7½ ounces, while it only accommodates 4½ ounces. So in infant feeding this should not be lost sight of, and always take into account the weight of the child.

Another difficulty we sometimes encounter is in the breed of cows that furnish milk for infant consumption. In my experiences the Holstein cow comes first, the native mountain stock next, and last the Jersey. For some reason, Jersey cow's milk is not well borne by most infants.

When good, fresh, cow's milk can not be obtained, or is not well borne, my experience is that during the first month most infants do well on peptogenic milk powder. After that age, Horlick's Malted Milk is my favorite and is easily prepared for us.

Let me give a dietetic recapitulation. Human milk, goat's milk, cow's milk, top cream, egg albumen, which is rich in protein gelatine, barley or oatmeal water, sweet milk, whey, buttermilk (fresh or the artificially made fresh from cow's milk), and any of the proprietary infants' foods that have given us the best results. Sometimes we meet with a baby that thrives well on condensed milk properly diluted.

Let me again warn all against the abominable rubber and glass-tube combination nursing bottle. It is utterly im-

possible to keep them aseptically pure and clean.

In regard to diet for older children, it is not so much in what they eat as in the quantity they consume of any one article of food at any one and the same time.

I can not refrain from calling to mind a few instances observed by me. When a boy, I accompanied my father on a call just outside out of the city to see a child some six months old, anemic and depleted. After examination I heard my father say, *"Madam,* your child is not sick, only starved." "Why," the mother answered, "I nurse it every time it cries." (My hearers, bear in mind we had no commercially-made baby foods sixty years ago.) My father told her to only nurse it every four hours; bathe its body with cod liver oil night and morning; every four hours to take a beschuit (toast bread), put it into a saucer, lay a lump of cut loaf sugar on top and pour boiling water over it, and after each nursing fill baby's stomach with this broth. And sure enough the child improved on this treatment.

Another instance at about the same time, a child could not digest and sometimes not even retain the milk it nursed. Drugs had no effect. Some old lady told the family to take the gizzard of a chicken, split it open, take out the contents, but not to wash it; boil this gizzard in a stew pan with a little water, and give the little one ½ teaspoonful of this broth every hour or so; and sure enough the child began to retain and digest the milk nursed. So we see it is not always the fine, hairsplit scientific modes that bring about cures.

Now and then representatives of the numerous concerns that manufacture infants' and invalids' proprietary foods come to our offices and present us with samples, pamphlets, etc., etc., of their special brands. They tell us if we will make use in practice of their particular line of goods, we will cure every case presenting, and by so doing outstrip our competitors and turn all their practice toward us.

What a fallacy! We should not listen to them, but rather recall a few lines of the chorus of a song popular some forty years ago, which runs as follows:

"Now all young men with tender hearts, pray take advice from me:
Don't be too quick to fall in love with every new girl you see.
For if you do you soon will find you have only loved in vain," etc., etc.

I do not like the term or the word competitor as between members of the medical profession; for if we only serve from a commercial or financial standpoint we put ourselves on a level with the shyster and the charlatan. We should be brethren, members of the great family of benefactors to mankind, and only strive to see who can best work and best agree. We should try to aid each other in conquering and preventing diseases and so be a blessing to present and future generations; to live in keeping with the sublime Golden Rule given us by the greatest of all physicians, who, while on earth, taught us to do unto others as we would have them do unto us.

COMPOUND SYRUP OF BROMOFORM.

Bromoform	15	minims.
Codeine	4½	grains.
Tincture of aconite	20	minims.
Spirit of bitter almond	50	minims.
Alcohol	1	fl. ounce.
Glycerin	2	fl. ounces.
Syrup of red poppies	3	fl. ounces.
Cherry laurel water	1	fl. ounce.
Syrup of tolu to make	20	fl. ounces.

Dissolve the codeine in the alcohol, then dissolve the bromoform in the solution and add the tincture of aconite, spirit of bitter almond and glycerin; having obtained a clear mixture, add it gradually, with constant agitation, to the syrup of red poppies and cherry laurel water, previously mixed with 10 fluid ounces of syrup of tolu, and finally make up to the required volume with syrup of tolu.

Failure in Business Due to Neglect of Health.

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THIS is an age of conservation. After a long period of wastefulness this country has at last awaked to the importance of husbanding its vast resources. And among other things, it is beginning to appreciate the economic value of health. The author of this article makes a simple, homely but withal a keen, direct analysis of the causes of business failure, which, as he points out, practically always lie in the poor physical health of the man who fails. The constructive side of the subject is not forgotten in the article, despite its rather negative title. Equally simple, homely, but equally pointed, advice is given for ensuring success.

This is an age of progress beyond all precedent; we are learning how to accomplish things, but we have yet a great deal to learn. The laws of health have more dignity in our eyes than formerly, but it is only within recent times that we have begun to realize that upon their observance chiefly depends the degree of success in life which will attend the individual. We know that we must take care of our business if we wish it to prosper; that the usefulness of our clothes and things we use depend on how well they are taken care of. How many business men fail in business and why is the number so large? The most plausible and acceptable conclusion is that they weaken their minds and bodies by indiscreet habits of living, thus rendering them unfit to attend to their business properly. It is being gradually understood that, given anything like the same original mental and physical equipment, he will most prosper among a given number who best preserves his health. Health is an almost indispensable requirement for success in business.

The soundness of the proposition advanced can be realized upon reflection, though few of us have perhaps reflected upon it as much or as often as we should have done; or, if we have considered, have not paid sufficient regard to our own conclusions. Simply and materially put, what is condition? How can an intelligent animal like man accomplish the most in life? What forces inherent in him will enable him to attain his ends?

The forces or attributes which contribute directly and almost inevitably toward success, whether in business or any other field of effort, are, assuredly, optimism inducing hopeful effort, physical vigor and a clear judgment. Given these possessions and the individual is thoroughly equipped for the accomplishment of whatever is in him. If he be in perfect health he has them all, as nearly as may be. Without health he has them only in an impaired degree. He is not at his best for what may be before him. His chances for success are decreased in very nearly the same ratio as his faculties are enfeebled. And these may be impaired in various ways, originating from various causes.

Bad Health the Real Cause of Failures.

The reports of the mercantile agencies give the supposed causes of the annual business failures throughout the country, including incompetency among them; but, were the analysis made closer, not only this but other reported causes would be attributed broadly to lack of good health in the bankrupt. Bad health or

rather lack of health, has been the cripler everywhere. The rheumatic laboring man can not earn his bread; the dyspeptic and uneven-tempered retailer can not keep his customers; the lawyer lacking in acuteness can not win his cases; the banker reckless of mood accepts insufficient securities; the speculator misses his opportunity or seizes upon the wrong one. The failures are the result of bodies existing in more or less evil cases with minds more or less obscured. The illustrations are all about us. To adduce proof of this, particular instances might be quoted almost indefinitely, many of them familiar to the whole country—railroad systems lost and merged and many a vast undertaking collapsed because of the sudden physical, and so the mental incompetency of the originating and devising and directing head. And for one of these great failures there are thousands in the lesser fields.

How can a man who is not well, in the ordinary sense of the word, accomplish what he should? He may have done well in the past, but his capacity has gone with the loss of a sound mind in a sound body, for among the old maxims there is none more justified than that the one is an essential for the possession of the other. Take a single illustration which may be here quoted, since no name or locality is given, though the facts in the case have been somewhat widely understood.

A Case in Point.

One of the most prosperous manufacturing concerns in the country attained its success almost entirely through the extreme care shown in the making of the articles it supplied the trade. It was not a particularly aggressive or even enterprising company, but it was absolutely reliable in its promises and its performance, and so had gradually reached its enviable position. All was due to its head, a man of conscientiousness and, ordinarily, of force and fixedness of purpose. Matters had gone well with the concern for years until about two years ago the president developed an apparent half-illness, the result of careless living and a too close attention to business, but still, in his opinion, not serious enough to demand his retirement from active and absolute control of the company's affairs. He was not to be opposed, since he was dominant in ownership, and accordingly, though a sick man, continued in the direction of everything connected with the manufacture of the articles produced. It was he who had always given this manufacture his close and almost overbearing supervision, and to him entirely it was due that the concern had attained its somewhat unique distinction. Now, though he abated no jot of his authority, he showed a remarkable change of attitude regarding the production of goods. His ideas ran to cheapness rather than to quality. He sought merely the greatest profit, caring nothing, apparently, for future conseqences. The results of this course were so immediate and so disastrous that he was eventually forced to abandon his position, put himself under the care of a physician, and indulge in a long rest. He returned a well man and none had been more disgusted and enraged than was he when he realized what had been his policy when he was not his normal self. Many thousands of dollars had been lost and there was a reputation to rehabilitate—which work, by the way, is going on rapidly. This particular case is quoted because, in this instance, the man was not seriously diseased. He had been suffering from dyspepsia and overwork and had become "unbalanced." His sense of results had been lost. He had become, temporarily, another and less reasoning individual. His case is but one of thousands. Who does not have a somewhat similar case in mind?

Value of a Clear Head.

The man who comes down to business in the morning in a condition of health has a perfect conception in his mind of what is before him for the day and what, according to an alert judgment, is the best thing to be done for the accomplishment of his ends. Healthy he is hopeful, and hopeful he is full of enterprise and energy. He does things. His optimism and vigor impart themselves to others, and so the machine works well. It matters not whether this well man be an employer or an employe, one who directs or one who carries out instructions, the result is the same, for health and healthy action are contagious. But we all know that!

Were the proportion of the healthy workers to the more or less unhealthy ones as much greater as it should be, there would be little need of the implications and suggestions of such an article as this; but, unfortunately, the showing of well-being in the business world is bad. The inadequacy resulting from unfitness because of bodily conditions is existent everywhere, nor is it confined to age or sex among those who are engaged in a business career of any sort or in any capacity. The competency of the world of business is impaired beyond all reason, because its individuals are either unthinking or unknowing. Surely, to a class such as this, one supposedly intelligent of necessity and competent above others in reaching and acting upon conclusions, an appeal for better living should have weight.

The particular form in which diseases may exist in the world of business is not here as a matter of consideration, save in a general way. It may be only indigestion and malnutrition with the attendant telling evils; it may be a condition leading to the serious affection of certain organs, one leading to tuberculosis or Bright's disease; it may be but threatened nervous prostration or neurasthenia, that malady without a perfect definition—whatever it may be, the effect, with degrees, of course, is the same in every case, more or less inefficiency in action and failure in attainment at the end. The symptoms are as varied as the causes, but the causes are what must be considered.

Our Habits Regulate Our Business.

Summarized briefly, and, in a sense, inadequately, but sufficiently to be at least more than suggestive, the causes which so cripple the business world are the outcome of our habits in eating and drinking, our lack of regard for pure air and exercise, our lack of sufficient rest and relaxation and our lack of effort in training our minds to the adoption of a certain practical philosophy. This may be only a crude epitome, but is sound in its deductions. Let us consider the eating habits of the ordinary business worker, head of a great concern it may be, or his stenographer, or any of his clerks.

We eat too rapidly—and too much—because we eat too rapidly. For the average business man or woman there is the hurried breakfast and the hurried luncheon—practically a swift gorging—and too much food not sufficiently masticated for easiest digestion is taken into the long-suffering stomach, which will, in time, thus treated, inevitably fail in the performance of its functions, and then will come disease. A minor punishment comes, in fact, immediately, for, after rapid over-eating ensues an oppressed and tired feeling and a sluggishness with an accompanying lack of business capacity which did not exist before the meal. We must digest what we eat, but we interfere with this digestion. We not only lessen our present competency, but risk its loss entirely. It is needless to say that no great intellectual activity can be permanently associated with gluttony. The amount of abuse which the modern civilized stomach can withstand is an eternal monument to the perfecting

powers of the evolutional survival of the fittest.

And with drinking as with eating. Water is the natural scavenger of the human body, but it must be pure. Bad water can usually be avoided, and this is one of the imperative requirements of health. To drink pure water and plenty of it and to drink as little else as possible should be the wise man's rule. It may be that all stimulants should not be absolutely avoided at all times, but there is no one of them that is safely taken as a habit. The human stomach was not made for the reception and absorption of stimulants. Alcoholism has been the cause of more disease, mental and physical, and of consequent business failures than has any other one agency, perhaps than of all other sinister agencies combined. This is a consideration of drinking in its practical aspect alone and not its moral one. That is here outside the question. The man who is engaged in business can never safely rely upon a stimulant for the momentary promotion of his acumen or as a remedy for exhaustion. Such aid is false, at best, and the reaction brutal in its extortion of compound interest. There can, discreetly, be no "habit" of even the mildest drinking.

The Need of Rest and Relaxation.

Every man has a certain fixed amout or capital stock of strength, and few have so much that it will admit of being taken out at both ends, head and heels at once.

Many an ambitious business man comes to grief through making prodigious efforts to accomplish a certain amount of business in too little time, and this invariably results in straining, and hence abusing, the human machine and injuring the business.

Every man needs, and is entitled to, time for repose, time for recreation, time to exercise his mental faculties in something outside his business, time to enjoy his home and family. It is vigor of mind which accomplishes results, and in order to keep up a healthy mentality, it is necessary to give the mind a variety of food and frequent intervals of rest.

And air. The constant breathing of pure air is an absolute essential to the health which gives ability, pure air in sleeping room, living room and place of business, with an addition of as much as possible of it breathed out of doors. The lungs, which purify the blood, must have the proper air for use in their great task. Bad air is deadly. Taken into the lungs, it affects the human being swiftly and for the worse. Its danger is considered far too lightly. There are hundreds of thousands of people who sleep with the windows of their bedrooms closed at night in retention of the hurtful ignorance of the past. Time was when the night air was thought unwholesome, yet it is what a wise and kindly nature has provided and, as has been well said, what should we breathe if not the night air at night? What we breathed before we learned to keep our windows open while we slept was a lot of air imprisoned in a room and poisoned over and over again by our respiration. We are each one of us, at times, infected with disease, but so slightly that we do not know it, and in a foul atmosphere the germs of such diseases thrive and become too strong for us. If we breathe pure air we expel them from our systems or render them incapable of doing its harm. This is but a simple presentation of facts now known and undisputed. We are learning to put even our tuberculous patients out of doors. Without pure air there is no health for those engaged in business, nor, indeed, for anyone.

Overwork in business is a frequent cause of failure, simply because overwork, with its inevitable final results of nervous prostration, must bring incompetency. It is unprofitable in every case, though the worker may not think so. In

one over-exerted the units of resistance to disease are lowered, his energy is exhausted and he has none left for the repair of his wasted tissues. The normal body is able to resist the germs of disease which are practically everywhere, but when its energy is exhausted it is not in condition to repel them. Overwork, even in the mildest aplication of the word, can wisely be indulged in but rarely and only for the briefest intervals. It is not infrequently accompanied by worry, and this, too, must be avoided. It is not always an easy task, but much may be accomplished in such direction by an enforced philosophy which may, at first, seem hopeless. We can train our minds amazingly, and it must always be remembered that the best plays the game—be it business or something else—who plays it calmly.

Need of Exercise.

We do not exercise enough; at least, the ordinary person engaged at a desk does not. What degree of daily exercise is involved in a ride downtown and home again at night after a day of which nine-tenths may have been spent seated? We can not get our exercise in chairs. Yet healthy animal life involves a constant breaking up and a renewal of the tissues of the body, and exercise is the great agent in this dissolution and substitution. The exercise should be out of doors, if possible, though indoor exercise is far better than none. There are few in business who can not at least walk and fill their lungs deeply with pure air each day. The more they walk and the more deeply they inhale, the better for them. The non-exerciser is in the afternoon of life, whatever be his age.

Simple and homely as these suggestions may be, yet they include in the abstract about all that can be said concerning the first law of healthy life. Of course, there are a host of minor things which the thoughtful must attend to—nervous prostration, with its attendant evils, might, for instance, be induced by so slight a thing, apparently, as eye-strain, but in such cases the law of common sense must work. Only general rules, but rules to be observed literally, can be given for the preservation of health in business, but, regarded as they should be, they are sufficient. We have, at least, the consolation that, from the point of view of health, we are far better off than were our ancestors; our dwellings are more sanitary; the stamping out of infectious diseases gives us a great advantage, and we are learning much. It but remains for those who are doing things in the world to exhibit a regard for what is known. And, paradoxically, this does not mean too much attention to this same self-preservation. It is another law that too much attention to disease invites disease. It is unprofitable to be all the time considering what is healthful and what is not. Petty considerations may be safely overlooked. Given half a chance, and its main needs supplied, and the body will take pretty good care of itself. As a summary, it may be said, as has been somewhere well expressed by the closest students of life, that a man or woman who eats only what is universally recognized as wholesome food, and that not gluttonously; who keeps regular hours and gets sufficient sleep; who sees to it that the water supply is ample and reasonably good and is properly employed for cleanliness, and that the lungs are adequately supplied with free air—that person will enjoy more than the average good health. Let those in the business world but observe the simple rules outlined and there will be fewer failures.

"606" PER RECTUM.

The latest about "606" is to give it in suppositories by the rectal route. This method is advised by Bagrow. The dose per suppository is 0.1 gram, to be repeated every week for six weeks.

Treatment and Closure of Wounds.

By J. J. Link, M. D., M. S., St. Louis, Mo.

THERE is, we think, in these days of surgical eclat, too much time and space and attention given in medical literature to the extraordinary and sensational, to the neglect of the ordinary and simple aspects of surgery, which latter, after all, interest the general practitioner most. We have endeavored to make up for this neglect by publishing this article from Dr. Link's pen on the simple and practical phases of surgical work. This article on "Closure of Wounds," which stage of surgery is met with very frequently, is one of general interest to our readers.

To begin with, all wounds must be thoroughly cleaned of blood and blood clots, shreds of tissue and all other material that may have been carried into the wound, so as to prevent infection and sloughing. Therefore, any wound produced by any instrument other than a clean surgical instrument must be soaped with an aseptic soap and hot water, if at hand, and thoroughly washed. If the wound be on the hairy portion of the body, as on the scalp, the surrounding portion of the skin or scalp must be shaved or the hair clipped short, even with the scalp or skin, and then thoroughly washed away by means of soap and water. The wound should then be treated with bichloride, from 1-5000 to 1-2000 solution, after which it should be lavishly irrigated with a hot normal salt solution, but the temperature of this solution should not be higher than to enable one to retain his hand in it comfortably. Irrigation must be carried out thoroughly. If the wound is in the nature of a flap this or any loose portion should be lifted and thoroughly cleaned under it. Punctured and stab wounds should be opened up (especially so if the projectile or weapon passed through the clothes), and search made for threads of clothing and other foreign materials. Punctured wounds made by toy pistols, nails, etc., it is advisable after a thorough cleaning and irrigation to apply full strength of carbolic acid and dress for the first twenty-four hours with a moist dressing of normal salt solution or bichloride (1-5000) solution, leaving the wound open.

In dog bites: After the usual aseptic treatment, the wound should be cauterized, preferably with nitric acid. If this be not at hand, then carbolic acid, chromic acid or the caustic nitrate of silver may be employed, and then a moist dressing applied of bichloride solution and dressed unclosed, unless the wound be a large lacerated one and upon the face, when it may be partially sutured and enough left open for drainage. All other ordinary wounds, after the usual antiseptic treatment and after having removed all blood clots and shreds of tissue that might slough, and hemorrhage having been checked, the surface should be brought into normal relation or restored into the former relation as nearly as possible, and carefully stitched with any of the materials or methods of suturing that I will mention below.

In buried sutures the material used should almost be invariably of an absorbable material, unless it be possible to remove the suture after it has served its purpose. Catgut material being now so thoroughly made aseptic, and the degree of hardening so reliably prepared that one need not fear of it causing infection or of it being absorbed before it has served its purpose. The wound having

been closed without drainage, a dry dressing should be applied of iodoform or any other aseptic gauze and snugly bandaged in place. If it be a small wound and on the exposed surface of the body, as on the neck or face or hands, a small dressing may be retained by means of an aseptic and non-irritant adhesive plaster or by means of collodion. In older wounds, or wounds left open for drainage and suppurating wounds, I prefer mild bichloride gauze and lots of it, with a thick layer of cotton over it, to be changed at least once every twenty-four hours, especially so if the discharge is profuse.

Closing incised wounds: The stitching is very much facilitated by insertion of tenaculæ at the angles of the wound and making traction, thereby bringing the edges in equal lines and nearer into their former relation.

In suturing a portion of the skin in which a needle scar is to be avoided, one should not employ a needle which makes its cut in a perpendicular to the direction of the suture or parallel to the line of the cut, but one which produces a round perforation or cuts in the direction of the thread.

Sutures should never be drawn any tighter than just to bring the surfaces in coaptation, and in some cases allowance must be made for some swelling. When sutures are drawn too tight there is apt to be a turning in or an eversion of the skin, preventing thereby primary union. There is also more apt to be stitch abscess and a cutting through of the suture and sloughing, since the constriction interferes with circulation and nutrition of the tissues involved. The knot should never be allowed to rest over the incision, but should be drawn to one side, as the knot will gradually sink itself between the edges and prevent union by first intention.

In removing a stitch one should avoid dragging any of the dry portion of the suture through the wound. To prevent this one must grasp one side of the stitch by means of a forceps and make sufficient traction to extract a small portion of the moist and buried part of the stitch and cut through this portion, then make traction on the unburied portion towards the side at which the suture was cut.

The method and material employed in the closure of wounds and coaptation of surfaces to be united, depends on the location, nature and depth of the wound, as well as upon the tissue involved and as to whether or not the suture will be placed in a situation where it may be removed or to remain buried.

The old method of closing wounds by means of adhesive plaster is being revived since the introduction of an aseptic and non-irritant adhesive plaster. Although some operators recommend its use for the closure of deep wounds, as after laparotomies, I deem it unsafe and incomplete work, unless the various deep layers are stitched first and the plaster used only superficially. An aseptic and non-irritant adhesive plaster (such as the Z-O Adhesive Plaster) is extensively useful in closing shallow wounds, as, for example, after the Halstead's method of extirpation of the breast, in which there remains but the cutaneous tissue that can be easily held in apposition by the plaster, which can be quickly applied.

Adhesive plaster may also be employed with advantage to relieve tension on the regular suture, as in hare-lip operation, or to prevent the retraction of flaps, also in cases in which needless scars are to be avoided, or the patient objects to being stitched. Also in cases in which the wound is left open for drainage and is to be gradually closed as drainage ceases; one can from day to day bring the edges together by fresh strips of the plaster.

In applying adhesive plaster to the skin the surface must be perfectly dry, and to avoid the turning in of the edges

of the skin, the plaster should be made to adhere up to the edge on either side of the wound and thus produce perfect juxtaposition.

It is advisable to turn under about an eighth of an inch of at least one of the ends of each strip of the adhesive plaster, in order to facilitate their removal. In removing the plaster one should take hold of the loose end and at the same time make gentle pressure on the skin of the same side, then make traction on the detached end in the direction and immedately over the attached portion of the strip, as if unrolling it.

In T-shape or cross-cut wounds the crucial stitch or the circular stitch are of special advantage in bringing the edges in juxtaposition.

For sake of speed and saving of material some surgeons still employ the continued suture. This suture does not hold the edges of the wound in perfect coaptation; for this reason it has been largely displaced by the interrupted suture for closing superficial wounds as well as in deep stitching, excepting in buried suturing when the continued suture is still employed. Where time is a desideratum the button-hole suture may be employed with much advantage; it holds the edges in better apposition than the continued suture.

In suturing the abdominal walls in tiers, or, in other words, in suturing the various layers separately, viz.: the peritoneum, muscular and cutaneous layers, there remains between each one of these layers what is called "dead space," in which an accumulation of serum and other fluids may gather and an infection cause a pus formation. To overcome this, interrupted sutures are. passed through all the layers including the peritoneum and skin, which are left untied until the various layers have been sutured and closed. The deep sutures are then brought together and tied, and in that way bringing the various layers in normal contact and thus obliterating the "dead space." For these deep sutures any suture material may be employed as they are removable and are removed. However, the suture material of election is silkworm-gut. For suturing the various layers the suture material for the buried sutures catgut is chosen, and many operators employ a very light suture, from O to 1 size, and rather make a reverse continued suture.

The invention of an easily removable deep suture by the English surgeon, F. R. S. Milton, deserves mention.

The deviser has evidently taken his inspiration from the familiar chain-stitch sewing machine.

The method of introducing the suture is as follows: A mounted needle is required, with an eye near the point; through this is threaded a long piece of silk. This forms the primary thread; the secondary thread is best formed by a stout piece of silkworm-gut which is sufficiently rigid to avoid kinking and being drawn into the sutured tissue. The two layers of the peritoneum which are to be sewn together are defined; the mounted needle, threaded, with the long end of the thread on the left hand or upper side of the needle when held as it will be when piercing the tissue, is passed from the operator through both layers of the peritoneum, beginning at the lower angle of the wound. The needle is then withdrawn, leaving a loop of silk protruding through the layers of peritoneum on the side of the assistant; through this loop the assistant passes the end of the silkworm-gut, from below upwards, and the loop is withdrawn flush with the assistant's side of the united flaps. The needle, not having been unthreaded, is again thrust through the flaps for the second stitch and again withdrawn, leaving a loop as in the first instance; the silkworm-gut is threaded through this second loop and the process is repeated till the whole of the flaps are united; these being held together by a series of silk loops, the primary thread,

held in position by the secondary thread of silkworm-gut passing through the loops on the assistant's side. The needle is then unthreaded, leaving a fairly long end to the silk. There will be on the face of the wound, on the side of the surgeon, the two ends of silk, one entering the peritoneal flaps at the lower end of the wound and the other leaving the peritoneum at the upper end, on the side of the assistant the silkworm-gut thread passing through the silk loops and also with long ends, one at the lower end of the wound and the other at the upper end. The silkworm-gut thread should now be put on the stretch and pulled gently backward and forward to see that it is nowhere kinked and that it can be withdrawn. This having been done, the four ends, two silk and two silkworm-gut, are each in turn threaded on an ordinary needle and made to pierce the skin on its own side of the wound, and are left thus whilst the wound in the abdominal wall is sutured in the ordinary way. This having been done the two lower ends of the peritoneal suture, being one of silk and the other of silkworm-gut, are then tied together and cut to a convenient length. The same is done with the two ends at the upper end of the wound and the process is complete.

When it is required to remove the deep stitch, which may be any time after the wound is healed, all that is required is to cut the lower united stitches on the silk side of the knot and the upper stitch on the gut side of the knot, or vice versa, and to pull out first the silkworm-gut stitch, which will offer no resistance, and then the silk stitch, which, having lost its support, can be pulled out with equal facility.

The "pin figure of 8" is a useful suture in the operation for hare-lip, and is still employed by some surgeons.

A quill suture is almost obsolete, but may have its uses in certain conditions.

Ford's suture merits a place among the best methods for suturing. It is of great advantage in cases in which time and saving of material is desired and at the same time if a suture is required which perfectly coaptates the cut edges, as does the interrupted suture. This suture is begun by starting at the upper angle of the wound, the operator passing the needle through the opposite layers of skin toward him, bringing it out and tying the knot. The suturing is then continued by the assistant holding the thread taut and the operator placing the thread in the shape of a loop and passing the needle under the thread on the opposite side and over the thread on the same side of the operator. The loop is then drawn over to the opposite side of the operator and the thread again thrown into a loop, but this time placed toward the upper angle of the wound. Then the needle is passed from the side of the operator, underneath that portion of the suture which spans between the last two stitches, and then over the loop and the thread drawn tight, so as to form a reef knot. The coaptation suture which is made by passing the needle through the skin at one end of the wound and then passing it through the subcutaneous tissues immediately under the skin, from one side to the other, until the other end of the wound is reached, when it is again passed out through the skin. The suture being now in a series of loops, which, when traction is made at both ends of the thread, becomes straightened and brings the skin and subcutaneous tissue into coaptation.

This forms a series of interrupted sutures, the knots of which remain successively connected.

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ECZEMA SCROTI.

In the chronic forms of eczema scroti Lallich recommends the following:

Zinci oxidi	10.0 grams.
Talci venet	10.0 grams.
Petrolati	20.0 grams.
Anthrasolis	2.0-4.0 grams.

M. F. pasta.

CURRENT MEDICAL LITERATURE.

TUBERCULIN TECHNIQUE.

PAUL E. BAIN has a timely article on this subject in the *Medical Council.* As every one knows, we have different preparations of tuberculin: Tuberculin Old (T. O.), Bacillen Emulsion (B. E.), Bouillon Filtrate (B. F.), etc. Each of these is good, and if the patient proves very susceptible to one preparation we may try another. Personally, says the author, I use T. O., but it is merely because I am more familiar with it. I do not make my own dilutions, but obtain them from a reliable pharmaceutical house, for the reason that they are in a position to be more accurate in making the dilutions than I am. It comes in a series of five bottles, each having ten times the strength of the next lower dilution, so that two minims of No. 1 contains 1-1000 milligram, and two minims of No. 2 contains 1-100 milligram of T. O. I administer it by the subcutaneous method, starting with 2 minims from bottle No. 1, increasing the dose as the patient can stand it until 20 minims are given, when I begin with 2 minims of No. 2. If at any time I have a reaction, I either omit the dose or reduce it. In advancing the dose, try to give the largest possible amount without producing a reaction. The tuberculin reaction manifests itself in three ways: at the point of injection, at the point of infection or location of the disease, the general or systemic reaction. The first named produces a redness of the skin at the site of injection, with swelling and pain varying in intensity with the degree of reaction. The second causes an uneasiness or soreness in the lung, with an increased cough. In the general reaction we have a rise of temperature, aching of the limbs, headache, nervousness, chilliness or, perhaps, a pronounced chill and other symptoms resembling la grippe. In my opinion, we never administer a dose of tuberculin without having the second reaction in greater or less degree. We may not have the soreness, but we have an increase in the amount of blood to the part. For this reason we must be very careful in administering tuberculin in hemorrhagic cases for, if we are not careful, we will be very apt to cause a hemoptysis. Great care should also be taken to avoid producing a general reaction too often, for we may produce an intolerance in the patient, and he will be unable to take the tuberculin even in minute doses. If the patient is oversusceptible to one kind of tuberculin I try another.

There is no way in which we can determine the duration of the treatment in advance. Each case is a rule unto itself, but it takes much longer to produce a cure than the majority of physicians claim, or at least that has been my experience. I have come to the conclusion that it would have to be in its most incipient stage for us to *cure it* in six or eight months, as some claim. I think it will require at least one year to absolutely cure a case that has progressed sufficiently far to produce symptoms.

In beginning treatment I give the patient a thermometer and instruct him in its use; so that he may take his own temperature, keeping a record of it in a book. He must bring this book with him to the office when he comes for me to administer the tuberculin. In this way I can tell what his temperature was at any time since he began taking the tuberculin. He must take his temperature three times a day at the same hour, usually 7 a. m., 12 m. and 5 p. m. After he has taken his temperature for one week I give the first dose of tuberculin,

which will be 2 minims (1-1000 miligram) from bottle No. 1. The patient is instructed to remain quiet for the first twenty-four hours after receiving the dose. Upon his return the next week, I can, by looking over the temperature book, determine the amount of the next dose. In giving tuberculin from the second bottle, we must remember that, instead of making a gradual increase, as we have been doing, we are doubling the dose when we increase from 2 to 4 minims. This is the one fault I find with serial dilutions. We should always try to give the largest possible dose without producing a reaction. Occasionally, where the patient is not improving as I think he should, I purposely give a dose that will produce a reaction. With two or three of my patients this seemed to change the downward course of the disease, and started them on the road to recovery. I take the weight of my patients each week and keep a record of it.

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OPERATIONS FOR HEMORRHOIDS.

Watson, in the *American Journal of Surgery,* asserts that the most satisfactory cocaine technic for rectal operations is that of Reclus. The patient is requested to strain, and a small pledget of cotton saturated with a weak cocaine solution is now introduced into the anus and the contraction of the sphincter as the patient relaxes draws the tampon up inside the sphincteric ring. This procedure is repeated with pledgets of increasing size until the sphincter is partially relaxed and the mucosa completely anesthetized. The needle is introduced into the anesthetized mucosa and the skin around the margin of the anus is infiltrated. After cocainizing the muco-cutaneous margin the index finger of the left hand is introduced into the rectum to guide the needle while cocainizing the sphincter. This step is painless if the needle is introduced at a right angle to the skin surface. Six punctures are made at equidistant points around the circumference of the sphincter and each time about one-half dram of the one-tenth per cent cocaine solution is injected into the sphincter and surrounding tissues. The sphincter can now be painlessly and completely relaxed in a few minutes by digital dilatation.

The sphincter must be well dilated before the operation is begun, and the dilatation should be very gradual so as not to lacerate the skin, mucosa or muscle. Tuttle uses only a moderate amount of dilatation, for he believes that divulsion of the muscle as practiced by some operators is not only unnecessary, but that the traumatism is the cause of the dull aching pain that so often follows these operations.

The ligature operation is preferred by many because of its simplicity, ease and rapidity of application and adaptability to the majority of cases. It can be performed in the lithotomy or Sims' position, the latter position being more comfortable for the patient.

After the usual preparation and cocainization the sphincter is dilated and the lowest pile grasped with a hemorrhoid forceps or an ordinary volsellum. Allingham ligates the smallest and lowest pile first, so there will be no danger of its being overlooked, and so that the blood does not obscure the field of further operation. A groove is cut around the lower two-thirds of the pile and the submucous and muscular tissues separated up to its base. The pile is then ligated with chromic catgut, linen or silk, and the hemorrhoid cut off, leaving sufficient pedicle to prevent the ligature slipping. When the pile is large and the hold of the ligature uncertain it is wise to transfix the ligature through the base of a hemorrhoid before tying. Any actively spurting vessel should be tied; venous bleeding, while sometimes free, will stop as soon as the operation is completed.

Healing is more rapid and stricture and contraction are prevented if the longitudinal incision is sutured transversely. An extensive removal of subcutaneous tissue when operating for hemorrhoids is a frequent cause of contraction, therefore the base of the ligature should be as narrow as possible and at the same time safely secure the blood supply. As much mucous membrane as possible should be left between the ligatures. It promotes healing, the patient is more comfortable, the bowels move easier and contraction and stricture are prevented.

The clamp and suture method: The pile is grasped in the long axis of the bowel with a long narrow-bladed clamp (one with slight serrations to prevent slipping is preferred), care being observed to always close the blades just within the mucocutaneous margin. The inclusion of skin or muscle within the suture is the most frequent source of pain following these operations. With scissors the pile is cut off, leaving about one-tenth inch of pedicle, just enough to insure the hold of the clamp. A suture of chromic catgut, linen or silk, is threaded into a fine round curved needle. The suture is begun and tied just above the upper end of the clamp to secure the hemorrhoidal artery, then continued as a continuous suture around the clamp until the lowest end of the pile is reached, when the clamp is removed and the suture tightened and tied.

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RICE FOR THE DIABETIC.

Stern, in the *Medical Record,* presents the following conclusions:

1. Rice—*i. e.,* the "polished" product of commerce — furnishes substantially nothing to the organism besides an easily digestible starch. Given in suitable amounts this starch is practically all absorbable and ready to serve as a calorifacient.

2. The commercial cereal is therefore peculiarly adapted to supply carbohydrates without any protein or mineral admixture of consequence.

3. This deficiency of protein and mineral substances makes rice an indifferent food so far as the formation of toxic protein products and useless or impossible pancreatic, cardiac, and renal activities are concerned.

4. The mineral and protein deficiency of rice facilitates the reduction of salts and the calculation of absorbable albumin necessary at every stage of the diabetic affection. (The elaboration of proteins from cereals and leguminous seeds by the healthy organism is mostly incomplete; it is impossible, or nearly so, in every case of advanced diabetes.)

5. Rice being nearly entirely absorbable, only a comparatively small quantity of it is needed by the diabetic organism; it is not the purpose of the rice to supply the total food requirement as does v. Noorden's standard oat diet; the cereal may be incorporated with any properly adjusted protein-fat combination.

6. Contrary to the oat diet, rice as a single form of carbohydrate and in suitable combination may be employed by the diabetic for more protracted periods; it may be prepared in a number of different ways and forms that prevent monotony and always furnish a palatable dish for the patient.

7. Sixty grams of the absorbable starch granule of rice generally produce the antiacetonemic effect of 250 grams of the but partly absorbable oats in the standard admixture.

8. Pronounced cases of acidosis are frequently suppressed by the ingestion of 100 grams of rice.

9. The amount of rice requisite to depress the acetonuria does not necessarily increase the intensity of glycosuria. In a large number of cases the glycosuria will even temporarily decline in a marked degree.

10. The modus operandi of rice is different from that of cereals rich in cellulose. Practically all the rice is absorbed and a certain amount is assimilated by the diabetic (this is evinced by the frequent increase in weight and vigor of the patient and the diminished glycosuria and acidosis), while material rich in cellulose, no matter how much albumin and fat may have been added to it, furnishes in effect nothing more than a starvation diet.

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CURETTAGE IN UTERINE HEMORRHAGE.

Whitehouse, in *The Lancet,* declares that as to the rational treatment of idiopathic uterine hemorrhage, it will be evident that neither ergot nor curetting will effectually control the condition. It can indeed be truly said with regard to uterine hemorrhage that the keystone of the therapeutic arch lies in a correct diagnosis. Uterine bleeding must be considered as a symptom only, and no stone must be left unturned to limit the examination to the pelvic organs. The abdomen must be examined for evidence of hepatic enlargement, the blood-pressure must be accurately measured by a sphygmomanometer, and the condition of the vessel walls ascertained. Evidence of syphilis or other constitutional disease should be looked for, and if possible the calcium index estimated. The condition of the heart, lungs, and thyroid gland must be noted, and if circumstances permit, a bacteriological examination of the uterine blood should be conducted. If the uterus is sterile, and no other cause is found to account for the bleeding, then one may confidently recommend curetting as a therapeutic measure. Individual treatment will, of course, depend upon the condition diagnosed. Thus where the bleeding is due to a high arterial blood-pressure the tension must be reduced by purgation, nitroglycerin, and dieting. Purgation will also have its place in depletion of the portal circulation where hemorrhage is due to hepatic cirrhosis. If the calcium index is low menorrhagia will probably be benefited by the administration of this agent, preferably in the form of the lactate.

In the case of bacterial infections Whitehouse has obtained good results by intrauterine applications such as peroxide of hydrogen, Churchill's iodine, or protargol. Treatment in these cases must be thorough and prolonged. The currette under such circumstances should, according to Whitehouse, be absolutely tabooed.

Finally, where hemorrhage is due to rupture of degenerated vessels in the uterine wall, hysterectomy appears to be the best and safest procedure. Howard Kelly devised a partial hysterectomy for similar cases, and it was introduced into England by Victor Bonney under the name of "utriculoplasty." So far the operation, in London at least, has received but little support, the general opinion being that if hysterectomy is required to relieve severe bleeding, it is preferable to perform the complete operation.

Such, then, is a somewhat brief consideration of a group of cases which Whitehouse believes are of considerable importance to those of us who are called upon to treat the special diseases of women. If all our patients suffering from excessive uterine bleeding could receive the benefit of a detailed examination before resort is made to the curette, Whitehouse asserts he feels sure that it would lower the 20% of failures referred to in his paper, and help to prevent the operation of curetting from falling into discredit.

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MYALGIA.

Tr. iodi	℥ss.
Tr. aconiti	℥ij.
Chloroformi	℥j.
Linimenti saponis	ad ℥vj.

M. Sig; Apply to affected parts.

HYPODERMIC INJECTIONS OF IRON AND ARSENIC IN SECONDARY ANEMIA.

John J. Musser, Jr., in the *Boston Medical and Surgical Journal,* states he has had the opportunity to observe the general condition and to make repeated blood counts in a series of fourteen cases which received, hypodermically, injections of iron and arsenic.

Early in the treatment of anemic patients some of the various Italian preparations of organic salts of iron were imported and used, but the results from their use were not satisfactory. The difficulty and expense of securing these preparations led to the use of a solution of ferric citrate prepared locally. This was used in various doses, but on the whole the results were not such as would indicate a continuation of the treatment. The ferric citrate in doses sufficiently large to give good results was found to be so irritating, and the injection so painful, that the patients for the most part rebelled against the treatment. Also in a few cases there were attacks of vertigo, fainting, and in some cases vomiting after the injection. Then the present formula was secured and so far has given most satisfactory results. The iron is used in conjunction with arsenic and sodium glycerophosphate. The iron and arsenic, of each .06 gm., and the sodium glycerophosphate, .10 gm., are dissolved in 1 c.c. of distilled water. This makes a slightly alkaline, reddish-tinged solution, clear, without sediment. It is placed in small glass ampoules, sterilized, and when sealed is ready for instant use. Each ampoule contains a sufficient quantity for one dose. The few minutes to sterilize the syringe and needle are all the time required to give the injection. It may be given in any muscle, but in the treatment of ambulatory cases the most satisfactory site of injection is directly into the muscles of the thigh or into the deltoid muscle. The solution is so free from irritating qualities that it has not been found necessary to give the injection deep into the gluteal or lumbar muscles. The treatments as a rule were given twice a week, though in some cases as often as daily for a short time. In several cases the injections were given only once a week. With the iron and arsenic, treatment was usually given for the local condition causing the anemia. In some of the cases treatment of the local condition had been carried on for some time without any definite improvement. Upon the addition of the iron and arsenic the results were usually most pronounced. The increase of hemoglobin and erythrocytes brought with it freedom from the troublesome symptoms occurring before. The amelioration of the symptoms and improvement in the primary trouble usually resulted in the patients discontinuing treatment before it was desirable. In most of the cases the treatment was simply the correction of dietetic and hygienic faults.

Of the fourteen cases treated in this manner, only one failed to respond promptly. This patient, a young married woman, was later found to be pregnant, and the treatment was discontinued.

The author has had the opportunity of studying the blood in a case of pernicious anemia. Before the treatment began the hemoglobin was 19 and the erythrocytes 950,000 per cubic millimeter. Two months' treatment raised the hemoglobin to 68 and the erythrocytes to 3,490,000 per cubic millimeter.

Musser's conclusions are as follows:

1. The intramuscular injection of iron and arsenic in organic compound is entirely practical in office and dispensary work.

2. It is a valuable adjuvant to the treatment of anemia secondary to some relatively mild condition.

3. It affords a method of giving the drugs in which the exact amount taken is accurately known.

4. It does away with the annoying complications frequently resulting from the administration of the drugs by mouth.

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THE DETERMINATION OF UREA IN THE URINE.

A new method for the determination of urea in the urine is described by Dr. O. Follin in the *Journal of Biologic Chemistry*, as follows:

"The urine is diluted so that 1 c.c. contains 0.75 to 1.5 mgms. of urea nitrogen. Dilutions of 1 in 20, 1 in 10, or rarely 1 in 5, are usually adequate for this purpose. One cubic centimeter of the diluted urine is then transferred by means of an Ostwald pipette to a large Jena test tube (2000 mm. by 20 mm.) previously charged with 7 grams of dry potassium acetate (*free from lumps*), 1 c.c. of 50 per cent acetic acid, a small sand pebble, or better, a little powdered zinc (not zinc dust) to prevent bumping during the boiling, and a temperature indicator. The test tube is then closed by means of a rubber stopper carrying an empty narrow 'calcium chloride' tube (without bulb) as a condenser (size of calcium chloride tube, 25 cm. by 1.5 cm.) The test tube and condenser are then suspended by a curette clamp so that it can be easily raised or lowered with reference to the small flame of the micro-burner. As soon as the acetate is dissolved and the mixture begins to boil, which usually occurs in about two minutes, the indicator begins to melt, showing that the desired temperature (153° to 160° C.) has been reached. The boiling is continued in a gentle, even manner for ten minutes, at the end of which time the decomposition of the urea is already completed. The apparatus is removed from the flame and the contents are diluted by the addition of 5 c.c. of water. The water is added by means of a pipette through the calcium chloride tube so as to rinse the sides of the tube and the bottom of the rubber stopper from traces of ammonium acetate which may be there. Not more than 5 c.c. of water should be used for this purpose. An excess of alkali, 2 c.c. of saturated sodium hydrate, or potassium carbonate solution, is added and the liberated ammonia is driven off by means of a strong air current into a 100 c.c. of measuring flask, containing about 35 c.c. of water and about 2 c.c. of n-10 acid. The time required for this will, of course depend on the strength of the air current (usually about ten minutes). The ammonia thus set free is determined colorimetrically against 1 mgm. of nitrogen in the form of ammonium sulphate."

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BORACIC ACID.

Formerly all the boracic, or boric, acid of commerce was obtained from borax by heating it with calcined ferrous sulphate in closed vessels, whereby sodoforic acid was formed, and boracic acid was carried on with the watery vapors, which escaped. This was a long and tedious process, and not much progress was made until it was discovered that boracic acid could be obtained from the boiling springs and jets of vapor in Tuscany. Long after the discovery of boracic acid in these springs, the brilliant idea struck the physicist as well as the chemist to employ the heat of the natural steam jets. This method had the effect of converting an unprofitable branch of industry into one of the most successful. The lagoons are situated near the top of one of the highest hills. As the volcanic vapor passes through the waters of the lagoons, the boracic acid is arrested by the water, which becomes impregnated with it. In California it occurs as the mineral sassolite, and as a saline incrustation on the crater of a mountain in the Lipari group, north of Sicily.

PROLONGED LABOR.

Richard C. Norris, in the *Therapeutic Gazette,* states that in unduly prolonged labor during the first or second stages, or a sudden accident, such as hemorrhage, convulsion, or prolapsed cord, at any stage is a common cause of fetal death during labor. To save the infant under the varying conditions that may be present and not put in jeopardy the mother require knowledge and skill and sound obstetric judgment.

Of all the signs of impending danger to the infant, slowing of the heart sounds is most important. Rapid or irregular heart sounds, violent movements of the fetus, followed by cessation, are all suggestive; but slowing of the heart-beat is most trustworthy. Throughout a protracted labor the heart sounds should be noted every half hour. An unduly rigid or edematous cervix, so often seen in primiparæ whose sexual organs and nervous systems are characterized by hypoplasia, is a risk to the child's life in the first stage of labor, for in these cases the nagging pains inhibit uterine contraction, prolong labor for hours, and exhaust the patients. These cases with infantile types of cervix and vagina, and with deficient nerve force and resistance, frequently lose their first babies because prompt aid is not rendered them. They differ from the other types of rigid cervix in strong, healthy women, with or without the cicatrices of former lacerations, in that anodyne drugs such as morphine, chloral, or scopolamine are not to be employed. Complete anesthesia with surgical means is necessary to open the birth canal—bags, manual, or in extreme cases incisions are better chosen—for this class of cases require assistance from start to finish both for their own and for their babies' sakes.

While I am sure that nature protects the unborn child from narcotic drugs given to the mother during labor, it is my practice never to give more than ¼ grain of morphine with 30 grains of chloral as the maximum dose throughout the entire first stage of labor, and often less is given. The danger to the child is a real one from large doses of scopolamine or any narcotic drug given in sufficient amount to make the patient unconscious of her suffering; and even ether, which is safest of all, can be the cause of death of the fetus.

Rupture of the bag of waters in primiparæ in the first stage of labor (except it be in eclampsia) is an obstetric crime. In a multipara when the os is two-thirds dilated it is often an obstetric blessing. Prolonged labor due to an overdistended bladder is evidence of an inefficient nurse. No one can hope to manage successfully for the child a prolonged labor without knowledge of the mechanism in progress and of the means to correct it when it becomes abnormal. Incomplete flexion in occiput posterior positions, at the pelvic brim or on the pelvic floor, or posterior rotation, must be recognized and appropriately treated. Face presentation must be recognized and an anterior position of the chin secured early in the labor. Transverse presentation, twins, breech—any deviation must be known early in the labor, before, indeed, the diagnosis of prolonged labor can be made, for each abnormality of presentation requires its own time, and a prolonged labor is not to be measured by hours only.

It is impossible to discuss baby-saving obstetrics without paying a tribute to the obstetric forceps. The time has come when its usefulness is disappearing for serious bony obstruction to labor, while its field is enlarged for assisting labor after preparing the soft tissues of the canal for a delivery expeditious for the mother and life-saving for the child. In a word, difficult high forceps deliveries represent an era rapidly becoming historic. Axis traction deliveries of fixed and well-molded heads will always be a triumph of obstetric art.

DANGER OF GENERAL ANESTHESIA.

The *Journal-Lancet* thinks that the selection of the proper anesthetic for a given patient does not receive the attention it should. No anesthetic is free from danger, and it is our duty to select the anesthetic for a patient that is accompanied by the least danger to him not only at the time of the operation, but subsequently. We have ample statistics bearing upon the *immediate* dangers of the various anesthetics at our command, but, unfortunately, we have no statistics bearing upon the *remote* dangers, which are greater than we realize. The tendency of the profession, the world over, is to be governed by prejudice in the selection of an anesthetic. It is unsafe and unscientific for anyone to say that a given anesthetic should always be used because it is safer than the other, for the term "safer" is a relative one and depends upon the condition of the patient.

In this country ether is the choice anesthetic in hospital centers because statistics have demonstrated that fewer deaths occur on the table from the use of ether than from chloroform. In the country districts, however, chloroform is the choice anesthetic because it is the more powerful drug and puts the patient asleep more promptly. In this Western country where many non-medical persons—nurses and others—are employed as anesthetists, the responsibility of choosing the anesthetic rests with the surgeon. Of the three agents used for general anesthesia, nitrous oxide is doubtless the safest, but, owing to the fact that it requires elaborate and complicated apparatus and special skill for its administration, it is not likely to be used as much as either ether or chloroform. But, safe as it is, it should not be used indiscriminately. Where the facilities are at hand for its proper administration, nitrous oxide should be the anesthetic of choice for short operations, and where for any reason ether and chloroform are contraindicated. It should not be used, however, in operations on the larynx, where there is extensive syphilitic degeneration, high arterial tension, heart lesions, advanced pulmonary tuberculosis, and exophthalmic goiter, because in these conditions it is more dangerous than the other anesthetics. After the administration of nitrous oxide it quickly disappears from the system, and, so far as is known, there are no late complications.

Our greatest difficulty is in choosing between ether and chloroform. In doing this, every surgeon should try to overcome his natural prejudice in favor of either one or the other, and think only of the interests of the patient under consideration. When there are no contraindications the concensus of opinion is that ether is at least four times as safe as chloroform, and should therefore be the routine anesthetic. The greatest objections to ether in the past have been that the drug has been unskillfully given and too much of it used, but now that it is administered by the drop-method, as chloroform has always been, those objections have been overcome. It should be borne in mind in the selection that ether is a stimulant and is the safer drug in the presence of heart lesions and fatty heart. In chronic inflammations such as tuberculosis, chronic bronchitis, chronic nephritis, ether is admissible, but in the more acute inflammatory conditions of these organs chloroform is the safer of these two drugs. In the presence of aneurism or general arteriosclerosis all anesthetics are dangerous, but chloroform is the safer.

It would seem at the present time that spinal anesthesia is not to take the prominent place that enthusiastic advocates of its use taught us to believe, because it is more difficult to administer and is fully as dangerous as general anesthesia, and the surgeon can certainly do his work more comfortably with the patient unconscious.

HOW TO USE VACCINES IN GONORRHEA.

Having selected the vaccine, says Panoff, in the *American Journal of Surgery*, the question arises how to use it. We are not all bacteriologists or serologists, and, therefore, we can not be guided by making continual opsonic indices. We can, however, make use of the findings of these men. They have come to the conclusion that the opsonic index is highest on the third day after the injection of the vaccine; that is to say, that on the third day the vaccine has reached its highest point of efficiency towards producing the artificial immunity that we are seeking. Such being the case, it has been the general rule to give another dose of the vaccine the following day, after this point has been reached, so as to again put into the blood that something in the vaccine which will again increase the opsonic index, and so help to obtain immunity, the condition that we are seeking to cure the infection.

Some of us make the mistake of allowing too long an interval to lapse between our injections, with the result that the effects obtained by the first injection are worn off before a second is given. We practically have to start all over again if we allow too long a time to intervene between our injections, and if we persist in injecting at long intervals, we must not be surprised if we do not obtain the artificial immunity that we are seeking, and that our results are not as satisfactory as expected, or do not compare with the good results obtained by one who is injecting at proper intervals.

Don't condemn the vaccine treatment! Correct your method of injecting the vaccine, and then you will see that the greater part of the failure has been your own.

How much of the vaccine to use at an injection is a question that can only be solved by experience. My method is to use 1 c.c. of the mixed autogenous vaccine at the beginning of the treatment. On the fourth day following the injection the patient reports to me, and judging by the results obtained, I inject either 1 c.c. or 2 c.c. of the vaccine. If the clinical condition of my patient has improved, I inject 1 c.c.; if it is the same, as on the first day of the first injection, then I use 2 c.c.

If the 2 c.c. do not produce any change for the better in the condition of the patient then I inject 3 c.c. four days later, and by then I generally get some reaction and notice some improvement in the condition.

It was recently suggested to me to use the vaccine in smaller doses, but oftener, say ½ c.c. of the vaccine every day. The idea being to keep the opsonic index at a high point after we had obtained it, and not to wait a day after it had been reached, as in the four-day interval, thereby gaining a day in every four, and at the same time have a continual high point in our opsonic index, and thus more readily obtain our artificial immunity.

The amount of dead bacteria in each c.c. of the vaccine is regulated by the amount of the organisms found in the cultures of each case. This refers to the autogenous vaccines. The stock vaccines have a mixed amount to each c.c. of the vaccine. In the autogenous the amount varies.

Some of the autogenous vaccines that I have used have had 50,000,000 gonococci and staphylococci albus aureus and citreus. Others 75 and 100,000,000 to the c.c.

The place to inject the vaccine is of no material importance. Every user of vaccine has a site of his own. The idea is to get it into the blood, from what point makes no difference in the result.

The apparatus needed to make the injection is a sterilized needle and graduated glass syringe.

Sterilization of the skin sufficient for our purpose is produced by painting it with tincture of iodine.

FRACTURES, DISLOCATIONS AND SPRAINS.

In a series of articles in the *International Journal of Surgery* on fractures that for trite, practical information are the most notable that have appeared for many a day, Colcord gives the following terse points for differentiating certain conditions liable to confuse in diagnosticating fractures:

1. *Dislocations*—This is especially true in fractures of the upper end of the humerus, either of the anatomical or surgical neck with marked displacement of the lower fragment. Here the sharp edge of the lower fragment may be felt under the skin and the upper one in the axilla.

Dislocation of the elbow in adults is often accompanied by a fracture. Here the X-ray is usually necessary to clear up the diagnosis.

Dislocation of the wrist may simulate Colles' fracture. Feel for the styloid processes of both radius and ulna and compare with those of the sound side. Feel for the point of sharp tenderness on the outside of the radius just above the lower end.

Dislocation of the hip should not be difficult to differentiate from fracture.

2. *Sprains*—The most difficult sprain in my own experience to differentiate from fracture has been that of the ankle. In this sprain, if severe, something gives way and it is always the weakest thing. The ligaments only may be torn, constituting a simple sprain, or a ligament may come away at its insertion, carrying with it portions of its bony attachment. Often there is fracture of one or both malleoli. Look for points of tenderness over the malleoli, keeping away from the margin, and follow well up to the fibula. Many fractures of the malleoli give no crepitus.

Sprains of the elbow may simulate fracture even to joint crepitus, which is frequent in babies. When you find crepitus in a baby's elbow, see if it is not also in the other one.

Sprained wrist with much swelling along the tendon sheaths may simulate Colles' fracture, but the classical points in the diagnosis of the latter should clear up most cases.

3. *Contusions*—A contusion severe enough to injure the periosteum may closely resemble subperiosteal fracture. Absence of a point of tenderness on the opposite side of bone will usually exclude fracture, as where a heavy body has fallen on the dorsum of the foot, we may try pressure on the sole of the foot over the point of a suspected metatarsal fracture.

In contusions of chest where fractured rib is suspected, apply pressure with each hand over the ends of ribs, keeping well away from the contused area. If there is fracture we get sharp pain at the point of the break. Or we may use a stethoscope over the rib and often elicit crepitus with movements of breathing.

A contusion of the scalp may feel to the touch like a depressed fracture from the hard rim of swollen tissues around it.

A contusion of a joint of the finger or thumb, transmitted from a blow on the end of the finger, is often difficult to tell from a fracture of the joint surfaces. From the frequency of this injury to those playing the "national game" the writer has called it "baseball" fracture. X-ray examinations will show quite a large proportion of these cases to be real fractures. In my opinion, all that present large joints afterward have been real fractures.

When in doubt in regard to the diagnosis of any fracture, give the patient the benefit of the doubt and take an X-ray picture, treating the case as a fracture until the diagnosis has been made.

OPERATIVE TREATMENT OF FRACTURES.

Frankenstein, in *Deutsche Zeitschrift für Chiurgie,* after an experience with open operation in twenty-two cases of fracture of various bones concludes that, especially in the treatment of fracture of the shaft of the tibia, in which fracture it is difficult by conservative methods to replace the fragments or to keep them in position once they have been replaced, the open operation with fixation by means of plates and screws is very highly to be recommended. Also, in fractures of the femur which show no tendency to healing, or which have healed in very bad position, open operation gives very satisfactory results. Fractures of the humerus with marked displacement at points well removed from the joints afford a suitable field for this form of operation. In fractures close to the elbow-joint bone suture will always remain a two-edged sword. So far as the ulna, the olecranon, and the patella are concerned, the author has had better results with suture than with plates and screws.

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NON-SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.

Solis Cohen, in the *New York State Journal of Medicine,* declares that surgical treatment of Graves' disease rarely becomes necessary in cases recognized early. In about 15% to 20% of cases surgery is made necessary by failure or inability to institute prompt or proper and persistent non-surgical treatment. In about 5% of cases surgery may become necessary, despite early and skillful hygienic and medicinal management. The principal element of medical treatment is rest, physical and mental, to be modified according to circumstances. Fresh air and regulation in diet are necessary, much as in pulmonary tuberculosis. Active elimination must be maintained. Educational exercise of the vasomotor system by hot and cold applications is always of benefit. Gastric and intestinal lavage may be helpful. Under such management, with perhaps occasional symptomatic medication (especially the use of intestinal antiseptics), somewhere from 25% to 30% of all patients may be expected to get well—the cases of so-called spontaneous recovery.

The application of ice-water coils over the heart and over the spine, the administration of trustworthy preparations of well-chosen organ extracts, particularly thymus, adrenal, pituitary and parathyroid preparations, together with various forms of auxiliary medication (and perhaps the use of certain mechanical manipulations, topical and radiant applications and electric modalities), will increase the number of recoveries to 80% or more.

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POSTOPERATIVE PAROTITIS.

Oehler, in *Beiträge zur klinischen Chirurgie,* says that in his experience postoperative parotitis was not an important complication, but rather simply an incidental phenomenon. The course was almost without febrile disturbance. It was almost in every case secondary to operations upon the stomach, intestines, or gall passages. In only one case did the process become septic. In all cases it came on in those suffering from great prostration, as when the strength and nutrition were much reduced by starvation, obstruction of the bowels, chronic icterus, or cancer. The occurrence of the parotitis may be due to the fact that the operation was not entirely aseptic and that it was of hematogenous origin. It may be also that the fecal vomiting which accompanies many of these cases might at times be the cause of direct infection of the parotid gland. By way of prevention of the condition it is advised that earlier operation be carried out and a larger incision be used in cases which are apt to develop postoperative parotitis.

THE SICK ROOM.

MEDICAL NURSING—LECTURE No. 9.

By Leon Louria, M. D., Brooklyn, N. Y., Attending Physician to the Jewish Hospital.

Catarrhal Angina.

CATARRHAL angina, acute sore throat, is an acute catarrhal inflammation of the mucous membrane of the pharynx, uvula, soft palate. It is frequently the result of exposure to cold and damp or swallowing of hot foodstuffs. It is also observed in the first and during the course of acute infectious disease. The onset is usually sudden with chills and fever, thirst, headache, loss of appetite, dryness of the throat, painful swallowing and a constant desire to clear the throat due to the increased length of the ovula. As the inflammation progresses, the secretion is increased, the mucus filling the throat and mouth and causing a constant desire to swallow, which is very painful. Very frequently the inflammation extends to the eustachian tube, causing pain in the ears.

A simple catarrhal pharyngitis is a mild disease, while in other cases we may have to deal with the so-called erysipelas pharyngitis, which is followed by erysipelas in the face. Rarely the erysipelas starts from the pharynx and then only spreads to the face and other parts.

Gangrenous form of pharyngitis occurs with diphtheria, scarlet fever and smallpox. The symptoms are more grave, resembling severe sepsis. When the inflammation extends to the submucous layers, involving the connective tisue, we are dealing with the phlegmonous forms of pharyngitis, ending in accumulation of pus in the submucous and deeper tissues of the pharynx, forming what is called retropharyngeal abscess. The prognosis in mild cases is a very favorable one; in the severe varieties, depending upon the underlying cause.

Treatment.

As to treatment, the routine measures are applied. The patient is kept in bed, the bowels are emptied and he receives some antipyretic, hot drinks, which at times abort the attack. Locally, painting the throat with a solution of cocaine relieves the pain and congestion. Holding small pellets of ice is useful, so is an ice collar around the neck. Gargles of some antiseptic and astringent solution are of value. As to local application like painting the throat or spraying with an atomizer, I wish to say that they are to be used only in adults or older children. While the younger ones rigidly object to any manipulations in their throats, it is poor policy to use force in these cases, because the little patients are only suffering harm from such applications, much more than the possible good that could be obtained from reducing the congestion of the inflamed membrane.

Laryngitis—Acute Laryngitis.

Laryngitis, acute laryngitis, so often called sore throat, is acute catarrhal inflammation of the mucous membrane of the larynx, which is due to atmospherical changes, cold draughts of air, either directly inspired or from exposure to other parts of the body; cold, wet feet, inhalation of irritating vapors, gas, etc., inhalation of dust, prolonged public speaking or singing; in children long fits of crying. The attack begins rather suddenly with a feeling of dryness, rawness and tickling in the throat, sensation of a foreign body in the throat, with hoarseness and a disposition to cough. Swallowing causes pain by the upward movement of the larynx and by pressure of the food on the larynx while passing through the esophagus. Attempts at speaking are attended with more or less

pain and distress. Coughing from the onset is of a noisy, harsh, toneless character and is accompanied by a sensation of scratching in the larynx. The first day or two the expectoration is scanty, afterwards more profuse. In the beginning sputum may be streaked with blood. The voice is at first decidedly hoarse and soon is lost altogether. A complete aphonia takes place. The respirations are but slightly affected in adults, while in children, whose larynx is much smaller, a tumefaction or a swelling of the mucous membrane may produce attacks of dyspnea. Especially during the night the child wakes up with an attack of suffocating, choking cough. It usually lasts about a week. The more severe form takes two or three weeks. The prognosis in a simple acute laryngitis is good.

Treatment.

The patient is to be confined to one apartment and the air is to be kept moist by placing in the room some kind of a kettle and the water is to be kept continually boiling. Locally, a hot pack applied to the larynx gives prompt relief. From beginning, a hot foot bath; saline cathartics are of decided value. Prompt action of the skin induces perspiration. Sweating will shorten the duration of the attack of acute laryngitis. Dover's powder, in combination with potassium salts, is frequently used. Inhalations from the onset are not only soothing but curative. Plain water, creosote, bicarbonate of soda, or tincture of benzoate are used for that purpose. Of course, the patient shall be kept as quiet as possible. Abstain from the use of the voice and from taking anything of an irritating character.

In rare cases acute laryngitis is followed by edema of the larynx. In this formidable affection we have to deal with an acute inflammation of the mucous membrane of the larynx and the glottis with an infiltration of the tissue by a serous sero-purulent or purulent fluid. Edema of the larynx may be the result of acute laryngitis or an abscess in or about the throat or tonsils, or it develops during the course of erysipelas of the face, scarlet fever, smallpox, Bright's disease. While the onset is similar to one of acute simple laryngitis, the symptoms gradually increase in severity, particularly the difficulty in respiration is markedly pronounced. The difficulty of breathing is rapidly increasing, the patient experiencing the threatened suffocation. The swallowing is difficult, owing to the swelling of the epiglottis, the voice is muffled, gradually becomes weaker and weaker, until finally it is almost gone. The cough, at first dry and harsh, becomes stridulous and suppressed as the infiltration increases. The difficulty of respiration as the disease progresses becomes greater and greater and the paroxysms of suffocation more frequent. The inspiration is accompanied by a whistling sound, caused by the narrowing of the lumen of the pharynx. The patient sits up in bed, his mouth open gasping for breath, his eyes protruding, the whole body trembling and after a time becomes blue. This may subside for a moment or two, when slight relief occurs, only to come again with more severity, and if nature or art does not bring prompt relief he dies from asphyxia.

The rapidly progressing dyspnea following the attack of simple laryngitis is very characteristic for this oedematous form of laryngitis. The prognosis is as a rule unfavorable. Even when local measures are promptly applied, a free respiration restored, the patient is likely to succumb to exhaustion or pneumonia, which frequently follows the edema of the glottis.

Treatment.

Treatment must be prompt and energetic. Leeches placed over the sides of the larynx in the mild cases may effect a prompt reduction of the edema. If infiltration of the connective tissue has

already taken place, a scarification of the mucous membrane may afford relief. If not, a tracheotomy is to be performed and no time to be lost. The longer we wait with our measures, the more severe and permanent are the changes in the blood and the less the chances to restore the patient. As to medication, our main efforts are directed toward keeping up the strength of the patient, and this is best done by giving large amounts of stimulants by rectum. I say rectum because we can not offer fluids liberally through the mouth, as the swallowing is greatly interfered with.

Spasmodic Laryngitis.

Spasmodic laryngitis, the false croup, is a catarrhal inflammation of the mucous membrane of the larynx, associated with temporary spasmodic contraction of the glottis. It is characterized with paroxysmal coughing, difficulty in breathing and attacks of threatening suffocation. Children are more frequently affected than adults. It is often called "child's crowing." The attack occurs chiefly during the night. The child, being perfectly well on retiring, after several hours of sleep is frequently awakened by a paroxysm of suffocation, and a dry, harsh ringing cough. After half an hour or an hour of these apparently threatening symptoms, the breathing becomes easier, the cough less croupy, the skin is covered with perspiration, and the child falls asleep. The next day there is present a loose cough, respiration being normal. If no treatment is instituted, these attacks may repeat themselves next and the following night. The symptoms are very characteristic, and while they usually alarm the patient's parents, not much anxiety is to be felt after learning that the child went to bed apparently healthy, and if, on examination of the throat, we do not find any evidence of a membrane. These attacks of false croup always terminate favorably.

Treatment.

The treatment during the attack consists in a hot application to the larynx. A sponge saturated with hot water or any other hot compress would do; a hot foot bath, if it can be given readily. It is advisable to make the child vomit. Syrup of ipecac is a home remedy frequently used with success. If not at hand, tickling of the uvula with the finger or a feather is frequently followed by vomiting. After the child has vomited once or twice, it is promptly relieved and the next morning is usually happy as ever.

The croupous laryngitis, the real, true croup, is the result of the formation of a membrane, which is often called membranous croup, and is caused by diphtheritic bacilli. It is usually secondary to diphtheritic laryngitis, or it may develop primarily as diphtheria of the larynx, but diphtheria belongs to the group of infectious diseases, and the lecturer on same will acquaint you with the symptoms and treatment of this form of laryngitis.

Bronchitis presents itself in acute or chronic form. Acute bronchitis, or bronchial catarrh, or cold in the chest, is an acute catarrhal inflammation of the bronchial tubes of the large, middle and smaller sizes, characterized by fever, pain in the chest, feeling of constriction, followed at first by a scanty, then more or less profuse expectoration. It is most frequently observed in children, especially during the period of dentition, when there exists a strong tendency to catarrhal inflammation of the mucous membranes and of the bronchi in particular. At the other extreme of life—old age—this disposition is again observed. It is most common in climates characterized by excessive moisture and by sudden changes in temperature. The bronchitis frequently starts as an acute nasal or naso-laryngeal catarrh, the patient having chills followed by flashes of heat, pain in the limbs and body—pain

of an acute character. with a sensation of fatigue, laziness. There is some elevation of temperature and the catarrh travels rapidly down the bronchial tree, causes pain beneath the sternum of a raw or burning character, aggravated by deep inspiration or by fits of coughing. Coughing is present from the onset and occurs in paroxysms of a hard, dry, toneless character. As the disease progresses it changes to a loose cough, accompanied by expectoration of frothy, transparent mucus, having a slaty taste. Later the mucus changes in color, becoming yellowish or greenish yellow and of a more tenacious character. The prognosis of acute bronchitis of the larger tubes usually terminates in complete recovery within two weeks. The very young and very old suffer more severely, and bronchitis in infants and old folks is to be considered a very serious ailment. When the patient is presented to us while he is suffering only from the beginning of the catarrh, involving only the nose and larynx, a good dose of quinine and a good sweat may abort the attack. In the first stage in adults when the mucous membrane is swollen and dry, we give drugs to increase the secretion and at the same time to produce perspiration. The dry, hacking, distressing cough, while not productive, calls for anodynes. Locally, a hot mustard foot bath and mustard paste to the chest. Keep the patient in a room where the air is moist. This all tends to give him relief. In the second stage, when the expectoration is more profuse, we order the more stimulating expectorants to make the mucus thinner and the cough easier.

Chronic bronchitis is either primary or secondary. Primary is due to repeated exposure to wet and cold, or to the inhalation of dust vapors or other irritating substances.

In secondary, we find bronchitis in patients suffering from gout, rheumatism, syphilis, cardiac and renal diseases. The pathological changes in the mucous membrane lining the bronchial tubes are different, depending upon the character of the catarrh we have to deal with. It is more or less dull red, with a deeply venous hue mingled with a grayish or brownish color. The vessels of the mucous membrane are dilated. The mucous membrane itself is thickened, so reducing the caliber of the tube and causing the roughening of the internal surface. The submucous tissue becomes infiltrated, contracted and indurated. The elastic and muscular coats of the bronchi become hypertrophied, lose their elasticity and, as a result of a loss of elasticity, the bronchial tube becomes irregular, dilated, forming what is called bronchial dilatation. This dilatation becomes uniform in character, involving the branch of the bronchus as a whole, resembling somewhat the fingers of a glove, or they may be sacculated or globular, forming actual cavities from the bronchial structure. The clinical symptoms depend upon the pathological changes. We may have to deal with so-called mucous catarrh, which occurs more commonly during the winter months, the so-called winter cough, which is characterized by paroxysms of coughing, more or less violent, followed by expectoration of a yellowish mucus. Or there may be a dry catarrh, with considerable cough and very little expectoration, which sometimes consists of small, hard globules.

In cases of dilatation of the bronchial tubes, which is frequently met in elderly people, where the tubes lose their elasticity so rapidly, we find paroxysms of severe coughing, followed by copious expectoration of greenish yellow, fetid mucus. The treatment of chronic bronchitis depends mainly upon the underlying cause. As stated before, bronchitis is only one of the symptoms during the course of many chronic diseases, like gout, rheumatism, syphilis, heart disease and Bright's disease. Therefore, the successful treatment has to be directed

toward the constitutional disease. In general, it may be said that a change of climate, if the climate is of unsteady, changeable character, is very beneficial. The winter months, the early spring and late fall, are the most troublesome ones. A stay in a mild climate with stationary temperature may prevent the recurrence of attacks. Proper clothing is very essential. Woolen or silk under-garments are almost imperative, and it is advisable not to hurry to change them before the warm weather has set in for good.

In case of gout, our main attention is to be directed toward the dietetic regime, which is of main importance. In these cases we find that the urine is highly acid, contains some albumin, and the arteries are hardened. The attacks of bronchitis are closely related to defective renal elimination, and after such is established the cough improves. In cases of heart disease, the bronchitis will proceed until better circulation is established. We have no drugs which can cure bronchitis. We prescribe according to the symptoms presenting. For instance, in case of a dry catarrh, we order anodynes to stop the irritation, while if the expectoration is profuse, ammonium salts or senega are useful. Turpentine, tar, sandal wood, balsam of Peru find their indication in the protracted course of chronic bronchitis. Iodide of potassium is a favorite remedy, its action apparently being directed towards absorption of thickened, inflamed tissue.

MODIFIED COW'S MILK IN INFANT FEEDING.

The subject of modified milk as a substitute food for infant feeding has been studied from many points of view, but two facts are being recognized, more and more, as of prime importance; first, that cow's milk is the most practical substitute food for infants, and, second, that it is just as important that the physical characteristics of cow's milk be modified as to the proportions of its food elements.

It is along these lines that First Lieutenant W. E. Fitch, of the Medical Reserve Corps, United States Army, has written a most practical paper upon the subject of "Modified Cow's Milk as a Substitute Food in Infant Feeding," published in *Pediatrics* (October, 1912). He studies the comparative chemical composition of healthy woman's milk and cow's milk, the general availability of cow's milk as a substitute food, the physical and chemical differences between cow's milk and woman's milk and the modification of cow's milk with cereal decoctions.

He emphasizes the necessity of using pure cow's milk, not milk that has been pasteurized or sterilized, but fresh, wholesome milk from a healthy herd. We all recognize the fact that the milk offered for sale in the large cities is not as pure as it should be, but, under the active work of the boards of health and the medical profession, it is rapidly improving in quality. When procurable, certified milk should always be used.

Dr. Fitch points out the fact that the modification of cow's milk with a cereal is a mechanical one due to the gelatinized starch, which changes the hard-curdling cow's milk into a soft-curdling milk, like human milk. The casein of cow's milk clots in hard, lumpy masses in the infant stomach, the digestive enzymes can not get at it, and any means whereby we can break up the clot and make it more flocculent, will increase the digestibility of the milk; and this can be done by the use of a properly prepared cereal decoction.

Not only do cereals modify the casein of cow's milk, but they, also, through their gelatinized starch, facilitate the digestion of fats by emulsifying the fats after proteid digestion in the stomach. This is important because, as Holt shows, the tendency today is to give a large percentage of fat, and the fats of cow's milk are more difficult to digest than the fats of human milk. With many infants

it is often necessary to begin with an amount less than 2% of fat, and rarely is it necessary to exceed 4%. There are numerous healthy infants who can not even digest 4% of fat at any time, and many, during the hot weather, do better on a reduction to 3% or 3.5%.

Theoretically, the child under six months, because of the deficiency of salivary and pancreatic secretions, is said to be incapable of digesting starches. Practically, this is not true. Nearly every fluid in the human economy has a diastatic ferment and, as a matter of fact, the very young infant does digest starch. We have seen too many babies successfully fed on arrow root to deny this fact. The author quotes Finkelstein, of Berlin, whose experience and general sound judgment are respected by the leading pediatricians of the world, who is emphatic that very young children are capable of digesting starches, and quotes favorably published opinions by Jacobi, Epstein, Schmid, Minard, Keller, Newman, Heubner and others, while our own Kerley has conclusively shown by his experiments at the New York Infant Asylum that "There is no age limit for cooked starch feeding."

The addition of cereals to cow's milk is not only allowable, but is to be most warmly recommended, not only in older, but also in very young infants. The advantages of cereal modification, in addition to the readier digestion and gain in weight, are to be found in the finer subdivision of the casein in the stomach, in the emulsification of the fat, and the disappearance of the soapy and dyspeptic stools, in the proteid-sparing power afforded by the cereals, and, finally, in the general increment of growth.

This is the experience of the leading pediatrists of the world. Not every infant, by any means, can take cow's milk, or asses' milk, or goat's milk; but starch foods may be added with benefit to cow's milk in the majority of cases, is established beyond all question, experimentally, chemically and clinically.

Dr. Fitch then considers the practical details of cereal modification, and gives formulas for milk mixtures, based on years of successful use. He gives, also, clinical reports upon a number of cases had with these formulas.

This article is an exceedingly clear and practical consideration of the much-befuddled question of the modification of cow's milk for infant use, and, best of all, it contains usable information.

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BITES OF INSECTS.

Neal writes to the *China Medical Journal* that he has found the following procedure very useful:

Take one ounce of Epsom salt and dissolve it in one pint of water, wet a bath cloth so that it will not drip and rub the body well all over, and not wipe afterward but dress, and flies, gnats, fleas, bedbugs, mosquitoes, etc., will never touch you. If one is exposed more than usual, being near water, or in a forest, then make a somewhat stronger solution, wet a cloth and rub the face, neck, ears, and hands well—do not wipe, but allow it to dry; it will leave a fine powder over the surface that the most bloodthirsty insect will not attack. Besides, the solution is healing and cleansing; it will heal the bites, subdue the consequent inflammation, and cure many diseases of the skin.

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ERYSIPELAS.

Cleanliness and asepsis are imperativey demanded. An alcoholic bichloride solution is excellent for routine cleansing of the parts. Crusts must be removed, and any pus evacuated. If there is great irritation, 1 part tr. veratrum viride in 15 parts alcohol (or 50% alcohol) may be used with advantage.

THE DOCTOR HIMSELF.

BENJAMIN RUSH ON MEDICAL FEES.

ON February 7, 1789, Benjamin Rush delivered a lecture at the conclusion of his course before the students of the University of Pennsylvania. In this lecture the father of American medicine discussed the duties of the physician. Although the art of medicine has been completely revolutionized in the century and a quarter that have elapsed since Rush stood before his admiring students, the remarks that he made on that remote occasion are equally applicable at the present time. His opinions on the subject of the medical honorarium are practically identical with those entertained by most medical men of today. To H. J. Achard, of Chicago, one is indebted for a presentation of interesting selections from this address. "When we consider," said Dr. Rush, "the expense of a medical education, and the sacrifices a physician is obliged to make of ease, society and even health, to his profession, and when we add to these the constant and painful anxiety which is connected with the important charge of the lives of our fellow creatures, and, above all, the inestimable value of that blessing which is the object of his services, I hardly know how it is possible for a patient sufficiently and justly to reward his physician. But when we consider, on the other hand, that sickness deprives men of the means of acquiring money, that it increases all the expenses of living and that high charges often drive patients from regularly-bred physicians to quacks, I say, when we attend to these considerations, we should make our charges as moderate as possible. Avoid measuring your services to your patients by scruples, drachms and ounces. It is an illiberal mode of charging. Let the number and time of your visits, the nature of your patient's disease, and his rank in his family or society, determine the figures in your accounts. It is certainly just to charge more for curing an apoplexy than an intermittent fever. It is equally just to demand more for risking your life by visiting a patient in a contagious fever than for curing a pleurisy. You have likewise a right to be paid for your anxiety. Charge the same services, therefore, higher, to the master or mistress of a family, or to an only son or daughter, who call forth all your feelings and industry, than to less important members of a family and of society. If a rich man demands more frequent visits than are necessary, and he imposes the restraints of keeping to hours, by calling in other physicians to consult with you upon every trifling occasion, it will be just to make him pay accordingly for it. As this mode of charging is strictly agreeable to reason and equity, it seldom fails of according with the reason and sense of equity of our patients. Accounts made out upon these principles are seldom complained of by them. I shall only remark further upon this subject that the sooner you send in your accounts after your patients recover, the better. It is the duty of a physician to inform his patient of the amount of his obligation to him at least once a year. But there are times when a departure from this rule may be necessary. An unexpected misfortune in business and a variety of other accidents may deprive a patient of the money he had allotted to pay his physician. In this case, delicacy and humanity require that he should not know the amount of his debt to his physician till time has bettered his circumstances." It is suggested by Achard that the only point on which we of today would be inclined to differ with Rush is

the matter of sending a bill "at least once a year." Most physicians will probably agree that the account should be rendered at least quarterly.

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SYSTEM FOR INDEXING CASE HISTORIES.

E. MacD. Staunton has devised, and in the *Medical Record* describes, a system for filing case histories so that the histories of any given class of cases would be available for immediate reference without the necessity of an elaborate system of cross-indexing. A little later this same system was applied to the filing of reprints and current medical literature. The system, which is based on the principles of the Dewey library filing system, has proved so simple and efficient in our own work that I believe it worthy of reporting in detail.

One of the secrets of the success of the Dewey system in library work is the substitution of generic numerals for specific titles in the classification of books. By adapting this same principle to the classification of diseases, we are at once able to eliminate the confusion arising from differences in nomenclature and, as far as necessary for filing purposes, we can eliminate the confusion arising from uncertainties or even differences in diagnosis.

The following outline shows the divisions used in our work which is limited to a general surgical practice. Those specializing in other lines of work may easily add the necessary detail to the subjects they are especially interested in. The first eleven chief divisions have to do with clinical subjects, the last three are added to show the ease with which the system may be extended to cover other subjects.

Outline for Indexing Case Histories and Reprints.

I—*Nervous System:*

11. Hysteria.
12. Neurasthenia, hypochondria.
13. Insanity.
14. Meninges (diseases and injuries of).
15. Spinal cord (diseases and injuries of).
16. Brain (diseases and injuries of).
17. Nerves (diseases and injuries of).
18. Migraine, epilepsy.

II—Circulatory System:

21. Heart and pericardium (all diseases).
22. Thrombosis and embolism (including gangrene).
23. Varicose veins, varicocele, arteriosclerosis, aneurysms.
24. Blood diseases (anemia, leukemia).
25. Blood vessel surgery.

III—*Respiratory System:*

31. Nose and nasal cavities.
32. Antrum, frontal and ethmoidal sinuses.
33. Larynx and trachea.
34. Lungs (pneumonia, bronchitis).
35. Pleura (pleurisy, empyema).

IV—*Alimentary System:*

41. Hare lip and cleft palate.
42. Tongue and salivary glands, esophagus.
43.1. Appendicitis, acute.
43.2. Appendicitis, chronic.
44.1. Stomach—surgical diseases.
44.2. Stomach—medical diseases.
45. Liver and gall bladder.
46. Pancreas.
47. Small and large intestines.
48. Rectum and anal region (fissure and fistula in ano—hemorrhoids).
49. Enteroptosis.

V—*Genito-urinary System and Gynecological:*

51. Kidney and ureters.
52. Bladder.
53. Prostate.
54. Urethra and penis.
55. Testicles, epididymis, vas, and seminal vesticles.

56. Uterus and endometrium, obstetrics.
57. Malpositions of the uterus.
58. Cervix and perineum, vagina.
59. Tubes and ovaries.

VI—*Hematopoietic System and Unclassified Glands:*

61. Lymph nodes; spleen—non-tuberculous diseases.
62. Lymph nodes—tuberculous.
63. Thyroid (goiter).
64. Tonsils and adenoids.
65. Skene's glands, Bartholin's glands.
66. Mammary glands.
67. Adrenals, pituitary, thymus.

VII—*Osseous and Muscular System:*

71. Bones — non-tuberculous affections.
72. Bones—tuberculous.
73. Joint affections—non-tuberculous, also bursitis—synovitis.
74. Joint affections—tuberculous.
75. Flat foot.
76. Spinal curvature, ligament strains, contractures.
77. Myalgia.
78. Club foot—congenital malformations.

VIII—*Special Senses. Skin and Derivatives:*

81. Eye.
82. Ear.
83. Mastoid.
84. Skin, hair, nails, and teeth.

IX—*Tumors:*

91. Benign tumors (except myoma), cysts.
92. Myoma uteri.
93. Carcinoma, hypernephroma.
94. Sarcoma.

X—*Infections:*

101. Septic infections. Infections of extremities—abscesses.
102. Peritonitis, adhesions. (See also under special organs.)
103. Gonorrhea.
104. Syphilis, chancroid.
105. Infectious diseases—influenza, typhoid, etc.
106. Tuberculosis. (See also under special organs.)

XI—Traumatisms:

111. Fractures.
112. Lacerations, stab and gunshot wounds, foreign bodies.
113. Sprains, dislocations.
114. Contusions.
115. Hernia.
116. Burns.
117. Shock and hemorrhage.
118. Electric shock.

XII—*Therapeutics and Pathology:*

121. Medicines and drugs.
122. Poisons.
123. Diet lists.
124. Anesthesia.
125. General pathology.
126. Pathological technique, laboraboratory methods, etc.
127. Theoretical immunity, anaphylaxis, etc.
128. Opsonins and vaccines.
129. Antiserums, hemolysins, and allied sera.

XIII—*Technique, Hospital Problems, Nurses:*

131. Surgical technique — operating room.
132. Surgical technique—preparation of patient and after-treatment.
133. Surgical technique—suture materials, instruments, etc.
134. Hospital construction, furnishings.
135. Hospital management.
136. Nursing.
137. Nurses' lectures and addresses.
138. Medical society.
139. Medical education.

XIV—*Catalogues, etc.*

141. Drug lists.
142. Catalogues—laboratory supplies.
143. Catalogues—operating room fixtures.

144. Catalogues—instruments.
145. Catalogues—orthopedic apparatus.
146. Catalogues—hospital beds and fixtures.
147. Hospital reports.

The system is applied to the cross-indexing of case histories, as follows: Mrs. B., seen in consultation, presents an old perineal tear with cystocele, fairly marked bladder symptoms, an umbilical hernia and a reasonably clear history of gallstones. When her history is filed it is given the numbers 58 (perineum), 52 (bladder), 115 (hernia), 45 (gall bladder). If the physician himself has not time to add the numbers, any interne, or assistant, or an experienced history clerk, can add the numbers with all the accuracy that is really necessary.

No further cross-indexing is necessary, for whenever it is desired to review the histories of any given class, all that is necessary is to go through the alphabetically filed histories and take out those with a number corresponding to the subject under investigation. It is then an easy matter to select the cases desired for study, and if necessary have these transferred to an appropriately systematized card.

The original case histories are kept in suitable sized envelopes and filed alphabetically under the patient's name. In this way all data concerning a given patient, such as special laboratory reports, correspondence, etc., reaches a final resting place in the same envelope.

In applying the same system to the filing of reprints it is only necessary to have a series of linen-bound, pasteboard boxes, such as will fit like books on a shelf, assigning to each box a number corresponding to each separate subject. I use cloth-covered pasteboard boxes, 10 inches long, 1½ inches wide and 10 inches deep. Such boxes can be obtained from any paper-box company for about 10 cents apiece. Each piece of literature relating to diseases of the gall bladder is given the number 45 and filed in box 45; likewise, goiter literature is filed in box 63, and kidney literature in box 51.

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COMBINED CASE RECORD AND BOOKKEEPING.

Another physician, in Pennsylvania, has devised a system of keeping both the records and the accounts of his patients on the same card, as follows:

He uses a system of index cards, 5 by 8 inches, with two divisions, one of which is labeled "open accounts," the other "closed accounts." One thousand cards are sufficient to start with. They are ruled on both sides and arranged alphabetically. On one side the cards contain the data concerning the patient, in the following order, in vertical sequence: Name (this being followed by age, nativity, address), history, symptoms, physical examination, clinical findings, diagnosis, treatment.

The essential points only are noted in writing. This procedure eliminates a vast amount of useless writing which has no bearing upon the case. Thus, if a case under observation strongly suggests tuberculosis, obtain a tuberculous history, if possible. The same for diabetes, nephritis or whatever the case may be. Do not waste time recording that the brothers, parents and grandparents died of old age. Simply leave out the negative part and note down relevant facts, as it is the pathological conditions in which the physician is interested.

On the reverse of the record card the patient's account is kept. For balancing the account, a single ruling across the card will suffice.

To summarize, we have one side of the card for the patient's condition, the other for his account. One sweep of the pen suffices to close the latter. Several of these cards may, of course, be fastened together when an account requires it.

The physician, when prescribing, should always retain a copy of the prescription

he gives to a patient. This is of advantage to him in more ways than one. First, it is systematic. Second, it is of great value in case of dispute. Third, it is a permanent record for the attending physician, showing just upon what line of treatment the patient has been placed from time to time.

The writer has designed and is using a prescription blank, or, rather, a prescription book, which is 4 inches wide by 8 inches in length, resembling a check book. The paper is heavy, smooth and tinted, 100 sheets making up a book. The inside cover acts as a blotter, which lasts as long as the book. The sheets are perforated down the center, allowing a generous-sized stub, on which a copy of the original prescription is written before this is torn off. This duplicate acts as a safeguard and as a double-checking system in dosage in case a prescription is challenged by the druggist. The stubs are filed away, ready for reference.

(The only criticism we have to make of this system is that the duplicate prescriptions have to be *written* on the stub, which in our opinion makes it practically worthless as a check against either the doctor himself or the druggist. There is no guarantee at all that the copy on the stub is identical with the original, since everyone is exceedingly prone to make slips in copying The only trustworthy check is a carbon copy, which represents an exact duplicate of the original.)

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THE LIGHT BEHIND.

After a long drive returning from a country visit at night, says a writer in the *Medical Council,* as one approaches the arc lights of the city, horse and driver are compelled to slow up because the light in front blinds one and there is none behind to soften the shadows. After passing the first light what a change!

The light in front is the light of learning; that behind is the light of experience. Of all men, the physician needs both of these lights. The man who drives into the dark with none but the lamp of experience to guide him casts his own shadow before to darken the counsel of other men, and he who hastens from the darkness of his own unenlightened experience is like the foolish moth that scorches its wings by too close an approach to the light of others.

If these things are true as regards the individual doctor, certainly they apply as well to the whole medical profession.

We are led to these remarks by some ill-advised statements by writers upon pharmacology, and who are trying to snuff out all the lights behind. Because the clinical observations of the old writers upon materia medica and therapeutics has not, thus far, been fully verified in the laboratory, these men would discard all but what the laboratory has proven—although always very thankful for a secondary clinical confirmation. The clinician is also thankful for laboratory confirmation. When a drug has the support of both the laboratory and of clinical experience, it has double justification for professional esteem; but when it has the support of but one of these factors, we are no more called upon to accept the dictum of the laboratory than that of the clinician, whether they are testifying either for or against the drug.

At all events, we refuse to lay more emphasis upon one factor than upon the other, and it ill-becomes certain ultra-scientific gentlemen to dispute the equal weight of testimony from the clinical side. It is up to *both* sides to get evidence and submit it to the court of *the whole medical profession,* and it is just as ungracious for the laboratory pharmacologist to reject the testimony of the clinician as it is for the latter to discredit the laboratory and its workers. Both sides need to humbly work along their own lines, and give proper credit to the other side. Gentlemen, don't forget the light behind.

SCIENTIFIC ODDMENTS.

(From *The Theosophical Path.*)

A professor has been dosing hens with urotropin, sodium benzoate, and sodium salicylate, to see if he could make them lay eggs that would not go bad. They did lay eggs that "proved far more resistant to the ravages of time and the decomposing effects of temperature;" but, on the other hand, nobody wanted to preserve these eggs, as they never were good, being abnormal from the start. There was "something noticeably unusual" about them. So until we find a market for noticeably unusual eggs, the experiment must be considered a failure.

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A scientific belief that is now *in articulo mortis* (so we are assured) is that of the alleged fluid condition of the earth's interior. We have been assured that the heat is so great that the inside must be molten. But now we are told that, if that were so, the moon would cause tides in that internal sea strong enough to shiver the crust to fragments, even though it were 2,500 miles thick. Also the way in which earthquakes are sent hither from Japan through the interior of the earth shows that this must be rigid like steel. So now we are told the inside is probably metal.

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A naturalist named Brown observed nearly a century ago that when a liquid containing suspended matter is viewed under a powerful microscope in an illuminated field of view, the particles are seen to be in motion. The motion is irregular and incessant. This was called the "Brownian movement." More recent investigation shows that it can not be attributed to any known cause and that it exists even in the drops of water shut up in the crevices of quartzose rocks, where the drops have been for unknown ages. This perpetual motion is evidently analogous to the motion of the particles of gases; for, as is well known, the particles of gases are in a state of perpetual movement in all directions. Motion seems to be a fundamental property of matter, an inveterate habit.

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The campaign against the common drinking-cup, resulting in the provision of paper cups instead, is a recent development in sanitation, and so is the plan of having individual paper towels in public lavatories. There is an outcry against the indiscriminate kissing of children, for fear of infection conveyed by the lips. These precautions, and many similar ones that could be enumerated, are doubtless wise—under existing conditions. But how regretable are conditions in the world today which render such precautions necessary!

Sanitary science is progressing rapidly, but the real question is whether it manages to keep pace with the progress of sources of infection. Health is, after all, the best safeguard; but it is not individual but public health that is in question. We are so interdependent that we can hardly expect immunity for ourself in the midst of an unhealthy society. Sanitary science, in its true sense, must mean the cure, rather than the prevention, of diseases. That would be sanitation indeed which would render us so healthy that we need no longer fear to partake of a common cup or permit a stranger to kiss our baby.

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It is suggested that the art of printing was by no means beyond the powers of ancient civilizations, but that they lacked the motive for practicing it. There is evidence here and there of the use of movable types for certain limited purposes, such as stamping. Printing would have been of no use for the kind of civilization they wanted. The same remarks apply equally well to other inventions characteristic of the modern period. It is evident that the ancient

civilizations did not contemplate or desire development along the lines we have followed. Among the Greeks physical science was rather looked down upon. From this point of view it may be unreasonable to compare ancient civilizations unfavorably with our own, because they did not develop in this particular direction, or to say that their failure to do so implies ignorance or impotence. So far as happiness, well-being, and beauty are concerned, they certainly did not fall behind us, to say the least. What if our kind of inventiveness is but a phase that races pass through at certain stages of their history, and which has been often tried before and given up or gotten beyond?

* * *

If a sense of humor is not inconsistent with sincere respect, the following scientific item affords an excellent opportunity for exercising this combination of qualities. One may be deeply convinced of the importance of music as a means of harmonizing the nature and rendering it responsive to the harmony within, and yet laugh at the particular instance given below. It is entitled "The Higher Education of the Docile Cow," and relates to the experiment of a Wisconsin man, who claims by the administration of music to have enabled his cows to give one-third more milk than had heretofore been their wont. Non-milkers, he thinks, need a little music to soothe their jangled nerves. One wonders if "The Holy City," played on a cornet in the pigsty, would enable the pigs to give better bacon. Probably the music would calm the temper of the milkman in the instance referred to, and thus act indirectly on his animal friend, as well as directly. If we could get more harmony into our lives, and carry it about with us, even in our humblest duties, it would be better for us, better for our friends, animal and otherwise, better for all the world.

* * *

A PERTINENT POST-ELECTION QUESTION.

The *Chicago American* editorial page propounds an after-election question of such vital moment to every man—including the doctor—that we venture to reproduce it for our readers' perusal and pondering and answer, each in his own way:

Wilson is chosen president. And Marshall, a very good man from Indiana, vice-president.

You have elected judges, congressmen and legislators.

Hundreds of men have been put by your votes in the way of making reputation and fortune.

Now, what are you going to do for yourself?

This is the ninth day of November, 1912. There is not much of this year left; there is not much of anybody's *life* left in which to do good work.

Voting is all very well, and cheering and predicting and saying "I told you so!"

But what about you, the proud, haughty, vote-casting, independent American sovereign, what are *you* to amount to? That is the important question for *you*, for *you* are responsible for *you*.

The people that you have put in office will not worry about you especially. To them you are only a grain of sand on the shore.

But to yourself you are the whole shore and the ocean out beyond and the blue sky above.

You still have left a few weeks of this year. And a few more years of fifty-two weeks each—and then *you* will sink out of sight.

With the election settled, and the excitement dying away, it is a good thing for you to wonder what you are to do, and how you are to do it, and also a good thing to *get at it as quickly as possible*.

THE HIGHER COST OF LIVING.

In his thoughtful work on "The Evolution of Modern Money," William W. Carlile quotes Mommsen as saying: "The commodity which becomes money must above all things not be the one which is indispensable for the supply of the most urgent material needs. It is for this reason that in no country has corn [that is, wheat] ever been used as the comparative measure of the value of other merchandise; and that mankind, after having, from the most remote antiquity, successfully and in various countries employed as money cattle, iron and copper, have uniformly ended with silver and with gold." It is interesting to note that silver was more valuable than gold in the dawn of civilization, and that in fact silver was the standard of value in Rome until the days of the Empire, and in England until the eighteenth century. Most of us in Colorado wrongfully thought, some sixteen years ago, that silver should be remonetized at the ratio of sixteen parts to one of gold.

Since the demand for gold is insatiable, economists had believed that it would not depreciate in value, no matter how much the world's stock were increased. This stock was doubled in thirty years, and is now augmenting nearly half a billion dollars annually. The extraordinary increase in our circulation money ($973,000,000 in 1880; $3,100,000,000 in 1910) is now generally accepted as an important cause of a lessening in its purchasing power, with resultant increase in prices. A still more important reason, brought out by Henry Wallace, in the *Youth's Companion,* is the great relative increase of urban as compared with rural population (in 1880, 11,318.547 urban and 38,837,236 rural; in 1910, 42,625,383 urban and 49,348,883 rural). The rise in prices is world-wide. The influence of the "protective" tariff, of "trusts" and of railway combinations in this country is at least a subordinate issue, however magnified by politicians.

The present period of financial uncertainty and social unrest is well described by Robert Luce in *The Independent.* He says, *inter alia:* "Never has there been so great a change in the standard of value over all the world, in so short a time. Never have the evils of a fluctuating standard of value been made so apparent. Huge have been the undeserved losses by some, huge the unearned gains by others. To illustrate, note what has happened to depositors in savings banks. The man who deposited $100 in 1896 in a bank paying 3½% compounded semi-annually, drew out in 1910 less in purchasing power than he had invested, on the basis of wholesale prices. He had progressed backward. Professor Norton has estimated that this has meant a loss of more than a thousand million dollars to the savings bank depositors of this country alone in the last fifteen years." The cost of living follows retail rather than wholesale prices, and in the last fifteen years has risen about one-fourth. Again: "Rising prices, by lessening the worth of every deferred payment, of every investment that is in the nature of a loan, aid debtors at the expense of creditors, and so dishearten thrift. By increasing the uncertainty of every investment, they discourage saving. For the same reason, they inevitably foster speculation, and the promotion of wildcat schemes of every variety, developing the conditions that end in crisis and panic. Their period is marked by the mushroom growth of unbridled extravagance, with blatant display of waste and folly. While a few gain, the many suffer. Because salaries or fees do not rise as fast as expenses, men ordinarily intelligent and fair become exasperated and unreasonable, and look to the ballot box for revenge against their troubles. Political upheaval follows, with rash changes that usually do more harm than good, because not based upon reason." Which leads us to remark that, after all, a man's best capital is in his head—intellectual competence and scientific skill.

MEDICAL PHARMACY.

DRUGS THAT INCREASE OXIDATION.

By Dr. Geo. F. Butler.

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THE influence of oxidation on metabolic processes is now a central feature not only of physiologic working hypotheses, but of pathologic as well. It has been demonstrated beyond a doubt that most of the conditions like diabetes, gout, etc., are the result of the products of suboxidation.

The ease with which the oxygen carried by the plasma penetrates the minute vascular network of all cellular elements, not only furnishes a clew to the physiologic chemistry of the latter, but likewise shows that various structures, the functions of which are unknown, are blood channels, or, rather, plasma channels. Thus the axis-cylinders of all the nerves and the dendrites of neurons were found to contain a fluid identified as blood plasma in its reactions to staining fluids. Even the neuroglia fibrils asserted their identity as plasma capillaries, the neuroglia-felt work of the substance of the brain and cord representing the intrinsic circulation of those organs. The muscular contractile structures, the various glandular organs, including the liver, pancreas and spleen, the gastric and intestinal glandular elements, etc., were all found to be so disposed as to allow the free circulation of this oxidizing plasma, the red corpuscles passing on in the larger channels. Contraction of the heart wall is due, according to Sajous, to the adrenal secretion which penetrates the heart substance by way of the Thebesian foramina. The coronary arteries likewise supply the cardiac muscle fibres with oxidizing substance.

In the muscular elements myosinogen is the primary source of residual energy. When combined with the oxidizing substance of the plasma, this organic body liberates the mechanical energy required for a given contraction; the nerves merely inciting and governing muscular function. Fibrinogen of the blood is similar to the myosinogen and combines in fixed quantities with the corresponding proportion of the plasma's oxygen.

The fluctuations of the body's temperature correspond to variation in quantity of fibrinogen supplied to the plasma. The source of functional energy in the nervous system is myelin, whose active constituent is lecithin, now used extensively in therapeutics. This myelin surrounds the axis-cylinders of all nerves and lines the inner surface of the dendrites of neurons and forms the ground substance for their cell bodies.

The influence of oxygen on nerve conditions, whether related to direct disorder of the respiration or not, was long ago pointed out by Meynert, who showed that contraction of the arteries by impeding respiration necessarily engenders a dyspnetic phase of nutrition and modifies the chemical changes associated with irritation resulting from a certain degree of dyspnetic intoxication. Dyspnea of tissue alone suffices to excite repulsive movements. Inspiration is the most ordinary form of repulsive movement evoked by a dyspnetic stimulus which, in extreme cases, may, by irradiation, involve a number of muscles. This stimulus results not only from a defective breathing, but likewise from increased arterial pressure, or from arterial contraction.

Impoverishment of the brain substance in oxygen has the effect of a chemical irritant which excites dyspnetic respiration in the medulla and produces epi-

leptic changes in the convulsion center. Increased arterial pressure in the cortex produces an improvement in oxygen. As soon as the condition of painful sensations exists, a dyspnetic phase of nutrition is established. The association of acidosis and glycosuria, as shown by Cordiat to exist with melancholia, and the depressed phases of other psychoses indicates the stuporous insanities and the suboxidation which occur in conditions of painful sensation, and as pointed out by Meynert, underlies the general failure of nutrition in these states.

The nature of the substances carrying oxygen in the system, as indicated by Sajous, shows that the kind of oxygen needed for therapeutic purposes must be one which has passed through biochemic changes and exists in a form that would pass into the circulation ready to become myosinogen or fibrinogen. There are two therapeutic agents which have been found to possess this quality. Both of them have been used therapeutically in the relief of disorders of respiration and in cyanosis.

About twenty-six years ago Penzoldt observed that the addition of quebracho to cyanosed blood produced a change in the arterial direction of a most decided character. Shoemaker asserts that the drug is of decided value in dyspnea of all kinds, whether bronchial, cardiac or nervous. In emphysema, with or without asthma, and in spasmodic croup it is of decided value. It improves the respiration when taken before hill climbing. Its effect in relieving cyanosis is decidedly marked. It diminishes the pulse and temperature in acute rheumatism and inflammations of serous membranes.

A notable phenomenon observed in poisoning from the drug is that although death may take place from asphyxia, the venous blood is red or reddish. For that reason Penzoldt believed that the relief of dyspnea obtained clinically from quebracho was due to its increasing the power of the blood to take oxygen, and the dyspnea caused by poisonous doses was probably due to its preventing the blood yielding the oxygen to the tissues. From what is known of the effects of overestimation with oxygen, this explanation seems probable.

In the depressed psychoses, the cerebral disease exerts an inhibitory action on cardio-motor innervation, causing the pulse to be very small, the arterial tone low and the capillary circulation very weak, and, in many cases decided thoracic symptoms with mental distress, resembling attacks of suffocation accompanied by "precordial fright," as it has been termed. Kierman states that quebracho is indicated in melancholia and conditions of depression, and probably for the reasons just outlined. He reports a case which seemed at the outset to be one of melancholia with the facies, capillary circulation and emotional depression well marked. The patient had phthisis and had been deserted by her husband. She ran down rapidly, and at one time seemed almost moribund from dyspnea. To relieve this, quebracho in ½-drachm doses of the fluid extract was given every hour, with very beneficial effects not only on the dyspnea, but likewise on the mental condition. She improved rapidly; the facies and depression of melancholia disappeared, but with this came new delusions. It was found, on careful investigation, that the patient had had systematized delusions of grandeur for years before being suspected of any mental disease. The melancholia, was, therefore, a complication of the pre-existing paranoia which had not been detected. Kierman, guided by this case, had used quebracho and found it of value in melancholia, in conditions of depression and in the pseudo-apnea, which accompanies the pseudo-anginas of auto-toxic neurasthenia and allied states.

The eclectics and veterinarians have long employed resin weed (sulphinum)

in similar conditions to those in which quebracho is indicated. Indeed, resin weed in an excellent synergist to quebracho. The fact that the depressed states have the marked suboxidation results, as pointed out by Coriat, indicates the use of these two oxidizing agencies glycosuria and acidosis.

The modus operandi of jambul in glycosuria and acidosis is allied to that of the two drugs mentioned and the three form valuable synergists. The alkaloid of quebracho, aspidospermine, possesses all the medicinal properties of the drug, is reliable, uniform in strength and can be used hypodermically. It has decided effects on the temperature of acute articular rheumatism and does not produce cardiac depression.

Dyspnetic crises occur in conditions where there is disturbance of the monarchial vaso-motor center of the medulla. They are hence to be found in connection with acidosis, whether related to diabetes, to the psychoses, to paretic dementia, to locomotor ataxia, to traumatism, or to epilepsy, neurasthenia or hysteria. In hysteria, conditions often occur where there is a suppression of the normal degree of activity accompanied by dyspnea which is but too apt to be regarded as simulated.

What is true of acidosis is likewise true of uremic states, whether secondary to neurosis and phychoses just mentioned, or the arterio-capillary fibrosis of Gall and Sutton, which is now recognized as the constitutional basis of most forms of chronic Bright's disease, or to the acute inflammatory forms of nephritis, which produce secondary constitutional symptoms, albeit the primary lesion is in the kidney.

In all of these dypsnetic conditions, the one great indication is to stimulate and sustain the respiratory action. This can be done only by agents which will remove the hematic sources of the condition and at the same time will sustain the heart and lungs without unduly removing them from the inhibitory action of the medulla. In the dyspnetic coma of the acidosic states good results have been attained by large doses of sodium bicarbonate, associated with codeine, morphine, heroin and apocodeine. Every one of these preparations of opium save apocodeine lock up the secretions, thereby impairing the benefit given through heart stimulation. Agents are therefore needed that are destitute of such action on the secretions.

In the condition referred to an error in diagnosis easily results, since while there is marked action of the bowels and kidneys, the eliminative element is deficient. This is singularly well shown in the fact that the first beneficial effect of sodium bicarbonate appears in the reduction of the quantity of urine passed. A patient passing three gallons of urine a day will have the amount reduced to one gallon and a quarter by sodium bicarbonate given in half a gallon of milk. Here the amount of water which is taken from the tissues is diminished by the influence of the sodium bicarbonate on the manufacture of b-oxybutyric acid from the muscles, as well as on the production of diacetic acid and acetone. The enormous strain to which the passage of such quantities of acid through the blood vessels subjects the heart cells for marked sustenance of it by agents which do not interfere with the excretion of the acids or which change them by oxidation.

While oxygen has been administered for these purposes with some success. still oxygen which has undergone no biochemic change is not easily assimilated and requires much time for assimilation.

Since quebracho, resin weed and jambul have the common property of rendering venous blood reddish, as already pointed out, it is evident that these drugs can take the place of oxygen and of the opium alkaloids with much better results as to heart stimulation and as to elimination. What is true of the acidosic comas

is equally true of the comas arising from uremia, etc. In every one of these conditions aspidospermine has proved itself of great value, whether given by the mouth or hyperdermically. The one great value of this class of drugs in these states is the fact that in addition to their power on the monarchial vasomotor center in the medulla, they have the power, through their influence on blood quality, of overcoming arterial tension to a great extent. This is of special importance when it is remembered with what frequency hemiplegia and aphasia follow uremic and acidosic comas.

These drugs during the eighties were used considerably and with marked success in the conditions described, but fell into disuetude along with many other useful remedies because of the wave of therapeutic nihilism occasioned largely by distortions of the microbic hypothesis, which led to neglect of all but antiseptic therapeusis and that adopted by the "man behind the knife." With the growth of the chemical phase of the germ theory, oxidation has once more come into play as an important phase of biochemistry, and the agents producing this, such as I have indicated in the present paper, are deserving of further study.

It is pleasing to note that rational therapeutics and dependable remedies are receiving a little more thoughtful consideration than they have for some years past, and it is the purpose of this paper, and will be the purpose of most of the papers I shall write hereafter, to stimulate a more earnest study of internal medicine, and especially of therapeutics.

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FLUID EXTRACTS.

Clayton Thrush, after a long discussion of the subject in the *Medical Council,* presents the following conclusions:

1. Fluid extracts, as sent out at the present time by the reliable pharmaceutical manufacturers, are carefully prepared and, wherever possible, are assayed either chemically or physiologically, or both, and assay strength designated on the label.

2. The amount of precipitation in most fluid extracts is comparatively slight and, fortunately, when it does occur, in most cases it consists of inert matter, and does not detract from the therapeutic activity of the preparation. A few important exceptions have been noted.

3. Fluid extracts precipitated much less than they did before assay processes were introduced and required, owing to improvements in their manufacture as the results of these requirements.

4. Practically all of the fluid extracts which are potent in the treatment of disease owe their activity to some important constituent (usually alkaloidal or glucosidal in character) which are capable of assay, hence their strength can be accurately determined and adjusted to the U. S. P. standard.

5. Fluid extracts of the important drugs can be safely dispensed up to the age of two years, and in most instances even to four years, with the exception of coca, cinchona and sanguinaria, all of which show decided deterioration in from six to twelve months.

6. Tinctures and the less concentrated preparations of the various drugs show less tendency to deterioration or precipitation, owing to the larger amount of menstruum in proportion to the active constituents.

7. Physicians should only prescribe fluid extracts as sent out by reliable manufacturers, of the U. S. P. standard of strength, and, as far as possible, they should discard all those which are over two years of age.

8. A time limit on the label should be required of the preparations of coca, cinchona and sanguinaria.

9. The fluid extract of ergot and digitalis should be tested physiologically,

and the date of the test designated on the label; and no preparation should be relied upon which is over six months old.

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FEVER PRESCRIPTIONS.

Dr. Luc Vital, in the *Medical Press and Circular,* admonishes that a fever patient should drink largely of lemon water (2 lemons cut up for a quart of boiling water)—apple tea, etc., are agreeable drinks. Citric lemonade is particularly indicated in acute rheumatism:

Citric acid syrup	3 ounces.
Water	1 quart.

In affections of the intestine lactic acid might be prescribed:

Lactic acid	2 drachms.
Syrup	3 ounces.
Water	1 quart.

For oliguria lactose might be given to increase the diuresis; 2 ounces in a bottle of Evian water.

To aid in the elimination of the toxins, purgatives should be given, castor oil or sulphate of soda:

Sulphate of soda	1 ounce.
Lemon syrup	1 ounce.
Water	9 ounces.

Calomel is useful both as a purgative and a diuretic, two grains every hour for four hours.

Enemas of cold water also favor diuresis (8 ounces).

Hyperthermia—There is no special treatment for hyperthermia as long as the temperature does not exceed 102° F.

One of the most active means of acting against it is cold water; cold baths (77°, 10 to 15 minutes) lower the temperature by one degree. Their further effects are: increase of the diuresis, elimination of the toxins, and stimulation of the organism. Cold compresses on the abdomen should be prescribed in the interval of the baths, while a stimulating mixture should be given before and after the bath:

Tincture of cinnamon	1 drachm
Syrup	1 ounce.
Brandy	1 ounce.
Water	3 ounces.

Where cold bathing is refused or not possible, cold effusions may be practiced every two hours; spirit of lavender may be added to the water.

Antithermic drugs are of little use; however, phenacetine might be given:

Phenacetine	6 grains.
Citrate of caffeine	2 grains.

For one wafer. One to two a day.

Tachycardia—The pulse should always be the object of careful attention, as it furnishes important indications on the state of the heart and degree of resistance of the patient. Where the pulse is small, depressible, and exceeds 120, a cardiac tonic is required; small and repeated doses of sulphate of spartein (½ grain three times a day) fulfill the indications.

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IS "606" LOSING OUT?

The Medical Council asks this question in serious earnest. It declares that, in spite of all explanations, an average dose of 60 centigrams of salvarsan contains 3 grains of arsenic. Evidence is accumulating that organic compounds of arsenic, such as the cacodylates and salvarsan, may be, and often are, decomposed in the body, thus setting free the uncombined arsenic with all its possibilities for harm. Besides all this, as instanced in an editorial in the *Medical Record,* September 14, 1912, there is danger of anaphylaxis, cumulation from repeated doses, and the sudden liberation of endotoxins. These latter act as synergists of arsenic, and anyone who has studied synergism knows what a dangerous factor this is with arsenic.

Paul Ravaut, in a meeting of the Société Médical des Hôpitaux, reported eight salvarsan fatalities showing fever, epileptiform convulsions and coma. Sicard calls this symptom-complex "meningotropism," but it is only a polite term descriptive of the nervous form of acute arsenical poisoning. The editor of *The Medical Council* has a case of this sort under his care at present. Fortunately,

coma was not complete and the man did not die, and if he had died we would have signed a death certificate stating the fatality to be due to "acute arsenical poisoning." We know now why some of the reports of death following salvarsan are so vague—the physician is too alarmed to scientifically observe his case.

Then there are fatal cases due to the digestive disturbances and muscular cramps characterizing arsenical poisoning. More insidious cases have been degenerations from arsenic, such as nephritis, jaundice due to disorganized liver, and melanosis.

The Therapeutic Gazette, August 15, 1912, tears to tatters the "explanations" of pro-salvarsan enthusiasts who still claim some intercurrent or concurrent phase in all fatal cases and believe salvarsan to be innocuous. It appears that post-mortem findings seldom show evidence of the alleged intercurrent disease. The *Lancet* has reported a number of fatalities in young and robust persons.

Contraindications to the use of salvarsan are gradually forming a long list of rather diverse conditions. Where will this end?

Again, even the enthusiastic advocates of salvarsan are admitting that it can not displace mercury and the iodides. We personally *know* that salvarsan *does* do many remarkable things; we have seen too many fine results to wholly condemn the drug; but we do also know that it will not displace the old treatment. We are forced to a very cautious attitude, however, and advise others to be cautious—and give only *one dose.* In our present chastened attitude, we commend the following conclusions of *The Therapeutic Gazette:*

"One gets impatient of these ever-changing 'explanations' which do not explain, and are only attempts to square the facts with the erroneous teaching that salvarsan is innocuous when given according to rule. They are an insult to the intelligence. In the routine treatment of syphilis, salvarsan has shown no advantage over mercury, except rapidity of action; that in permanency it is less reliable; and, therefore, that it is unjustifiable to expose patients to its undoubted risks. It may have a place in exceptional cases which do not yield to mercury."

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BOILING DOWN THE PHARMACOPOEIA.

The Medical Council thinks that one of the most foolish propositions over which medical journals have wasted their pages is that to limit the medical practitioner and the U. S. P. to a few academically selected drugs. While it is perfectly true that a list of the more important drugs should be selected for purposes of instruction and student examinations, the list should represent *types* of drugs and have no bearing upon the clinical field. The idea of "getting to the core of therapeutics" is frequently expressed by gentlemen who assert that the list of drugs we need hardly exceeds a dozen, and they would leave the rest of them to the tender mercy of the "uninformed and credulous."

Let us stop a moment, says our contemporary, to select a list of must-haves in ordinary medical and surgical practice. Alcohol as a solvent and disinfectant, two general anesthetics, one local anesthetic, materials for saline solutions, a mineral acid, one or two alkalies, bichloride phenol, a silver salt, a boron derivative, a permanganate, a mineral oil, a vegetable oil, several disinfectants, an ointment base or two, several special antiseptic drugs for use in dermatology, a counter-irritant, a caustic, an astringent, a mydriatic, iodine, applications for external parasites, a mercurial purge, antisyphilitic drugs, an iodide, a drastic vegetable purge, a mild vegetable purge, an oil laxative, saline laxatives, antitoxins and serums, numerous antidotes, salicylates, arsenic, a bromide, iron, an emetic, digitalis, strychnia, ammonia, a nitrite, a vascular sedative, ergot, diur-

etics, antigonorrheics, opium, several anthelmintics, quinine, a hypnotic or two, a sedative expectorant, a stimulating expectorant, belladonna, camphor, some special preparations for children, drugs for hypodermatic use, several chemicals necessary in making up various solutions, detergents, suppositories, bougies, emergency mixtures of various sorts (such as arsenic antidotes, preparations for burns and various lotions).

But we pause in the list; enough has been said. "What fools these mortals be!" Thirty centuries of experience have established drug therapeutics; but what of that? Better thirty years of *us* than a cycle of our forefathers.

VERATRUM VIRIDE.

A. J. Crance, in the *Eclectic Medical Journal,* states that this is an important agent in medical practice and has always held a conspicuous place in his medicine case. He has invariably found it to be one of positiveness in action, always doing good when properly indicated. It is preeminently a drug for sthenic conditions; the more pronounced this picture, the more actively it may be pushed to effect; when this has been accomplished, it should be discontinued, or the dosage very materially reduced. It is usually called for during the onset or early periods of acute febrile movements, when the circulation is active and the vessels overcharged with blood, as evidenced by the full-bounding pulse, obstructed capillaries and congested facial expression.

Whilst veratrum is classed as a poisonous agent, its toxic features are but rarely manifested, owing to its property of exciting the vomiting centers and otherwise in non-toxic doses opening the avenues of elimination for its removal, therefore is non-cumulative. Medically, veratrum viride is primarily a radio-vascular depressant and sedative, with antispasmodic properties as a secondary result. On the heart it reduces its pulsations and lowers the tension; on the arterial circuit it causes a relaxation with softening of the pulse. The combined influence serves to lessen the temperature of the body in febrile states. In exalted action of the circulatory system its power over the momentum of the heart is readily demonstrated by the exhibition of the agent in 5 to 10-drop doses of the specific tincture given hourly or half-hourly for a few repetitions. It is unwise to employ the drug in this manner, except we have a definite object of accomplishment in view, as occurs particularly in convulsive diseases, and especially of a puerperal nature. Ordinarily, the fraction of a drop or 2-drop doses, repeated once hourly, or even two hours, will best serve the purposes for which veratrum is usually employed. Thus given, its action over the circulatory apparatus is regular and steady, gradually overcoming the rapidity of the heart's impulse, reducing the tension of the arterial vessels, relieving the engorgement of the capillaries and inducing transpiration from the skin; which in the aggregate brings about a physiological state of nature approximately that of health, or places the systemic forces in a receptive mood for auxiliary treatment.

It is understood, when speaking of veratrum in controlling the rapidity of the heart's action, that it applies in direct opposition to the use of digitalis for the same purpose. The digitalis heart is rapid and feeble while the veratrum heart is rapid and hard or bounding. The inconsistency of a combination of these remedies is clear, and the practice is extremely illogical.

The symptomatic condition calling for veratrum is in some respects the same as that for gelsemium, which is frequently indicated in combination, and thus united are workers in harmony, owing to a synergistic influence contributed by gelsemium.

SOME TRIED PRESCRIPTIONS.

We value old friends, because we have tried them in hours of trouble and need, and they have proven true. Why, then, asks J. G. Hutchinson, in *The Therapeutic Record,* should we not set store on tried prescriptions—those which we have evolved in the course of our years of combat with disease? The author then proceeds to give a number of these old and tried combinations, beginning with a favorite prescription of Da Costa's.

Each fluid drachm contains 5 grains of sulphate of quinine. It is most excellent in the treatment of intermittent and remittent fevers, and malarial toxemias: Sulphate quinine, 80 grains; dilute sulphuric acid enough to dissolve the quinine; sweet spirits of nitre, ½ ounce; syrup of tolu, enough to make 2 ounces.

The dose is a teaspoonful every three or four hours.

In the treatment of swelling joints in a subacute rheumatism the following prescription by Aulde is of great value:

Salicylic acid	1 drachm.
Lard	½ ounce.
Olive oil, q. s.	

This is to be rubbed in a mortar into an ointment. This entire amount is to be rubbed into the swollen joint. This may be repeated every three or four days, as occasion may require.

In the treatment of leucorrhea, I have found the following prescription one that is very reliable:

Alum	1 drachm.
Sulph. zinc	½ drachm.
Borax	4 grains.
Rose water	8 ounces.

This, diluted by the addition of a pint of hot water and used as a vaginal injection every night before retiring, will often give the most satisfactory results.

Lumbago is conceded to be a disease that is both painful and obstinate. The following prescriptions, one of which is to be applied locally and the other taken internally, are of much service. This prescription by Burggreeve is to be painted over the painful area with a camel's hair brush:

Collodin	1 ounce
Tincture of iodin	1 ounce.

The internal prescription was devised by Levy, and is as follows:

Acetate potassium	½ ounce.
Salicylate sodium	3 drachms.
Gaultheria, water enough to make	3 ounces.

A teaspoonful of this is to be taken every four hours.

We all have epidemics of measles, and these cases are by no means the simple proposition that some would have us believe. The truth is a great many people die with measles; others suffer ever afterwards from the consequences of the disease. It is wrong to treat these cases with contempt; it is a great mistake not to treat each case seriously. A good general prescription for measles is the one employed by Keith, which is as follows:

Carbolic acid	1 drachm.
Acetic acid	1 drachm.
Deodorated tinct. opium	1 drachm.
Spts. of chloroform	1 drachm.
Water, enough to make	8 ounces.

A tablespoonful is given to an adult every four hours until fever abates. The dose must be adjusted for children. A child six years old can take a teaspoonful. This mixture promotes the eruption, relieves restlessness and is in many ways an ideal remedy in measles.

A large number of patients ask for a remedy for nervousness. It wears a patient thoroughly out to suffer in this way. The following prescription in my hands has proved a most satisfactory one in the treatment of nervousness. It was devised by Potter, and is as follows:

Bromide potass.	1 ounce.
Fluid extract guarana	1½ ounces.
Syr. tolu	3 ounces.
Water, enough to make	6 ounces.

Two teaspoonfuls of this, taken every three or four hours, usually allays nervousness very quickly.

Sore nipples are the source of much distress to nursing mothers and ought to be treated with an effectual remedy as

The form employed is the D'Arsonval current. The general method is to give a 10-minute treatment every day, with 150 to 500 milliamperes of current in the patient's circuit.

Caution—Autocondensation increases the bodily temperature, and if the latter is high, say 103°F. or over, the first treatment should last only five minutes, and another one should not be given until the reaction from the first subsides, which will be in from three to five days. After a few repetitions, daily treatments may be resorted to. This treatment increases the symptoms for two or three weeks, after which they showed marked and steady improvement in a majority of cases.

Laboratory tests in conjunction with the treatment prove its efficiency. The results are so positive in such a large percentage of cases that it should be employed wherever possible.

Finsen Light—This agent is superior to other forms of electrical treatment in lupus; of no value in other than superficial lesions.

Ozone Inhalations—Laboratory examinations show ozone to be markedly beneficial in pulmonary tuberculosis. It may be given by daily inhalations at the physician's office, but the ideal manner is by an ozone generator that may be kept running constantly in the patient's room, thus continually charging the air respired with an increased amount of ozone.

Recapitulation — In tuberculosis of glands the X-ray, in conjunction with surgery, is the choice of methods.

In lupus apply either the Finsen light or the X-ray.

In pulmonary cases always use autocondensation and ozone inhalations. Neither of these measures interferes with other established modes, whether medical or hygienic, and the patient is given two additional chances for his life. Facts are stubborn things, and an investigation of clinical results with autocondensation and ozone will convince any fair-minded man of their merit.

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SOLAR LIGHT THERAPY.

The Solar Light (or that of the electric arc) contains seven visible kinds of light, *i. e.*, seven varieties of energy capable of affecting the retina of the human eye. These seven varieties are shown when sunlight is refracted by globules of moisture floating in the atmosphere, giving us the seven colors of the rainbow.

But there are other forms of energy in light that are not perceived by the human eye. These invisible rays are found on either side of the visible spectrum, and, to indicate their respective location with reference to the red and violet fields of the spectrum, are called infra-red and ultra-violet rays. The visible rays of the spectrum are red, orange, yellow, green, blue, indigo and violet rays.

The Roentgen rays, or the energy of the radioactive substances, such as radium, do not belong under the head of photo-therapy. They are not spectral rays, but form a chapter of their own, viz., radio-therapy.

The Spectral Rays (as produced by the sun or electric arc-light) have three distinct functions, to-wit, heat production, light radiation, chemical action.

In keeping with this triple function we recognize heat-rays (thermic rays, calorific rays), light-rays (luminous rays), and chemical rays (actinic rays).

Heat is produced principally by the infra-red, red and orange rays. Light is generated mainly by the yellow and green rays, while the blue, indigo and violet, and especially the ultra-violet, rays are chemical (actinic) rays.

The Effects which the different forms of light-energy are capable of producing on the human organism may be summarized as follows:

The Heat-Rays stimulate gently, increase arterial pressure, promote oxidation, accelerate and intensify local metabolism, encourage absorption and granulation, relieve pain; in short, do everything that dry, penetrating heat is capable of accomplishing. Dry heat of this kind is abundantly produced by an incandescent light. It becomes wonderfully sedative and analgesic if a blue globe is used and placed in a parabolic reflector. This is the idea with which the name of Minin of St. Petersburg is associated. Recently a multiple lamp of this kind has met with much favor (Russian lamp). The single white 500 c. p. incandescent lamp mounted in a hood has been advertised a great deal under various names, although it is by no means equal to the multiple blue lamp of Minin.

The Light-Rays, pure and simple, are individually of but little clinical interest, because they are always in combination with heat-rays or chemical rays. In a general way it may be said that they supplement the action of the chemical rays.

The Chemical Rays are of the greatest biologic and therapeutic interest and importance. They are the disinfectants in nature's vast domain (germicides) and influence the process or organic existence (life) in many essential details, especially by their affinity for oxygen. They affect the processes of respiration and hematopoiesis by influencing the consumption of oxygen, the manufacture of hemoglobin and the qualitative composition of the blood. They, therefore, represent a vital stimulant of supreme importance.

Finsen will never be forgotten, as it was he who recognized the overtowering biologic importance of the chemical rays and defined the sphere within which they could be made clinically available. His method consists in concentrating the light of the sun or the electric arc and causing it to pass through a sheet of water, thus eliminating the heat-rays and obtaining a strong and cold concentration of the chemical rays. Their usefulness and efficacy have long been recognized in the treatment of all bacterial invasions of the skin and subcutaneous tissues and in the treatment of chronic skin diseases, indolent ulcers, etc. Many devices have been put on the market embodying the Finsen idea.

Sunlight—From what I have stated it is plain that the sun, after all, is the perfect photo-therapeutic apparatus. The sun-bath of the ancients, religiously practiced by the common people as a part of their daily routine, and eulogized by Hippocrates, has risen to a high plane of therapeutic significance in these latter days. We have learned to appreciate the helio-therapy of antiquity, because we now know something of the tremendous biologic importance of sunlight.

The researches of Minin, Finsen, Bang, Kattenbracker and many others have revealed the well-nigh unlimited clinical possibilities of the different agencies contained in light (thermism, luminosity, chemism), individually and collectively. We have learned to appreciate the value of these agencies in the treatment of disease. We are prepared to appreciate the value of an effective substitute for sunlight when the latter can not be procured or when circumstances, *i. e.,* the inclemency of the weather and the climate, make it difficult or even impossible to give our patients the benefits of applications of solar light.

Artificial Sunlight—This much-desired substitute for sunlight is now offered in the form of a cleverly constructed therapeutic lamp of beautiful design and finish, consisting of a powerful arc-light placed in front of a reflector and inside of a cylinder, one end of which is open and allows the passage of the tremendous volume of light generated by the arc. The lamp is mounted on a pedestal which contains a powerful and easily regulated current-controller. It seems to me that this lamp is destined to play

a most important part in the practice of modern phototherapy. It represents the most successful attempt to construct an apparatus for the production of artificial sunlight. What can we do with the electric arc-light?

Uses of Arc-Light—To begin with, its usefulness covers the whole territory of clinical indications which are met by application of dry heat. The penetrating character of the thermic rays radiated by an arc make them available when other forms of dry heat, which explode on the skin or in the subcutaneous tissues, would inflict unbearable torture and eventually burn and destroy the tissues.

The heat-rays produced by this lamp carry the beneficent effects of dry heat into the deep tissues. The effects on the local circulatory, metabolic and absorptive activities, are most profound. In cases of deep muscular rheumatism (for instance, lumbago) this form of dry heat is, for the reasons given, one of the very best therapeutic agents. Local applications produce a marked anodyne effect and can be employed in all cases where the prime object is relief from pain. The action on the skin and on the subcutaneous tissues is coincident with considerable metabolic stimulation. The use of this lamp, therefore, is indicated in all cases in which granulation or absorption is to be encouraged.

The arc-light produces an abundance of chemical rays. What is the effect of chemical light on the living tissues?

Effect on the Tissues—If a beam of concentrated chemical light is allowed to fall upon healthy skin, the eventual result will be an erythema followed by much local irritation, dermatitis, molecular death and desquamation. The tanning of the skin in the summer is the result of the deposition of pigment in the skin. Pigment is nature's safeguard against the destructive action of the chemical rays, the latter being absorbed by it.

Chemical light seems to affect the procreative function of plants and animals so far as the sex-production is concerned. Chemical light favors the production of males. The germ-killing power of chemical light has been proven beyond a doubt. It has a strong affinity for oxygen. It produces a disintegrating effect upon living tissues. The greater the resisting power of the tissues, the less intense will be the action of the chemical rays. Since morbid tissues are less viable than the normal, the destructive effect of the chemical rays upon the cutaneous tissues wherein tubercle-bacilli or other germs have found lodgment, can be readily understood.

The treatment of lupus is the classical example of physiological action of Finsen's rays. Their germ-killing power strikes at the very essence of the affliction. They stimulate healthy action by attracting oxygen to the part. The morbid tissues of the afflicted portion are disintegrated by the rays. In this way a healthy reaction is set up, which tends toward restoration of the normal condition. The consistent and persistent use of the Finsen lamp is indicated in all parasitic skin diseases. Lupus, sycosis, tinea, certain forms of chronic eczema, psoriasis, disease of the hair-follicles, furuncle, carbuncle, alopecia areata, etc., furnish a rich field for successful clinical work.

Light Therapy and Internal Disease—What degree of clinical usefulness may be attributed to these rays in the treatment of internal diseases we are not yet prepared to say. That the body is practically translucent, or can be made so, can not be questioned. It is needless to point out the enormous importance of this fact in connection with the possibilities which chemical light offers in the treatment of tuberculosis of internal parts, especially in cases of incipient tuberculosis of the apices of the lungs. Chemical light forces the absorption of oxygen over the area acted upon by the

light and a corresponding increase in the output of carbon dioxide follows. This fact makes chemical light a local alterant of the greatest value.

A Few Precautions—It is plain what an unlimited number of clinical indications may be met by the proper use of this new therapeutic lamp. The proper technic should not be neglected. The comfort and tolerance of the patient should be considered. The eyes of the patient and attendant should be protected by means of blue glasses. Parts that are not to be exposed can be covered and in this way shielded. Seances last from fifteen minutes to an hour, depending on the tolerance of the patient, the character of the trouble and many circumstances which are suggested by the peculiarities of the individual case.

Chromotherapy—The subject of chromotherapy, or treatment by means of different colors, has recently attracted much attention. The therapeutic arc-light should be equipped with colored glass-shields for the administration of chromotherapeutic agencies. Let me repeat some observations which I have on a previous occasion discussed in connection with this subject.

Blue Light possesses wonderful sedative power. The royal mausoleum at Charlottenburg in Germany has a reputation of being a veritable shrine where persons with shattered nerves can find peace and comfort. The story goes out that the spirit of the sainted Queen Louise, the idol of the German people, hovers about this place and brings peace and happiness to those who seek refuge within the hallowed walls where the mortal frame of that angel of peace had found its last resting-place. Matter-of-fact physicians, however—science is brutally truthful—attribute the sedative effects observed to the mellow blue light with which the magnificent stained windows flood the interior of that historical place.

Finsen explains the quiet and peace of the evening hours by the influence of the deep-blue light emitted by the canopy of heaven. Many experimenters in hypnotism use blue light to enshroud the organisms of their subjects with the tranquility which facilitates concentration and suggestive control. I have demonstrated the sedative effects of blue light by placing a Minin reflector ten feet in front of a person who is comfortably seated and is told to rivet his eyes on the blue light in front of him. The average person falls asleep within five minutes.

Further, in the cutaneous tissues the sedative effect of blue light shows itself by a complete suspension of sensation. This fact makes blue light a local anesthetic with a great range of usefulness, especially in minor surgery and dentistry. In emergency surgery blue light not infrequently takes the place of the hypodermic syringe.

Whatever the physical characteristics of this force-modality may be, it is different from any energy which a white globe, however powerful, is capable of producing. The pain-relieving action of a strong incandescent white light is distinctively due to heat, and resembles to all intents and purposes the anodyne effect which follows any other application of heat. In the blue light the color is of vital significance, as shown by the sedative anodyne and even soporific action of the blue light at great distance from the patient when the effects of heat would be out of the question. That the effect of blue light is not suggestive but distinctly physical in character is shown in its action upon blind patients and also upon persons who are in total ignorance of the effect aimed at. I beg to remind again the reader of Finsen's statement attributing the physiological calm of the evening hours to the relative sparsity of the invisible chemical (ultraviolet) rays and the preponderance of

the visible chemical (blue) rays which are radiated by a deep-blue sky.

There are a thousand different ways in which blue light can be made therapeutically available. In local troubles characterized by lowered vitality (*e. g.*, passive hyperemia, catarrhal conditions, indolent ulcers, local evidences of autointoxication, etc., etc.) the blue light is useful. It restores the physiological tone of the part by increasing local metabolism, relieving pressure and promoting absorption.

Red Light has a distinctly stimulating, exciting and irritating effect on the animal organism. The red light of the tenderloin districts of large cities, the red gowns, draperies and curtains of the temples of Venus Vulgivaga and of their inmates, the red rag waved in front of a bull, are familiar examples of the red color and its acknowledged effects. The latter may be made therapeutically available in cases in which a distinctly exciting action on the organism or any region is desired. Red is the nerve stimulant par excellence. It acts upon the sympathetic nervous system and through this upon all the vegetative and more especially upon all the animal functions of the economy. The discreet physician will have no difficulty in adapting means to the end and giving the subject of chromotherapy its proper place in clinical medicine.

NEW CHARACTERISTICS OF URINE IN HEALTH AND DISEASE.

Pribram, in *Deut. Arch. f. klin., Med.*, has made interesting observations, injecting various portions of normal and pathological urines into rabbits and noting the effects. The doctor finds (1) that the injection of urine gives rise to the formation of hemolysins, precipitins, and complement binding antibodies in the serum of the injected animal. The precipitin formation is always more marked with the injection of normal urines than with albuminous; the fixation of complement, on the other hand, is greater when one uses albuminous urines for injecting the experimental animals. (2) The injection of urinary sediment and of the alcohol-ether insoluble portion of the non-dialyzable fraction ("lysogenous substance") of the urine produce the same changes in the serum of the injected animal as described under (1). (3) The "lysogenous substance" contains the normal urinary albumin and a number of other substances. In chronic nephritis this fraction is practically normal, whereas in acute nephritis its increase runs parallel to the amount of albumin. (4) Both qualitative and quantitative examination of the fraction show that its chief constituents are not albuminous. (5) The substances in the urine which act as antigen probably arise in rénal cells. (6) The urine is markedly toxic. The same is true of the lysogenous substance and of the sediment. Repeated injections seem to raise the resistance of the animal to the poisoning. (7) The symptoms of uremia are possibly due to a retention of the toxic bodies contained in the lysogenous substance. (8) The "Morner fraction" of the urine contains traces of lysogenous bodies, but no precipitin or complement binding antigens, and is not toxic to animals. In the examination of the urine of fifty patients with hypertension, the usual heat and acetic acid test showed a trace of albumin in fifteen, the acetic acid and heat in thirty-six cases.

LICHEN.

Lichen planus does well under alkaline and bran baths, anti-pruritics and soothing agents. The tar ointments, ichthyol, bismuth, subnitrate and zinc oxide are all useful. Lichen ruber is rarely seen in the United States. Its treatment is similar to that of l. planus.

THERAPEUTIC BRIEFS.

Hyperacidity.—

Creta preparata .....grains Lxxv.
Magnesii oxidi .....grains xxx.
Bismuthi subnitratis .....grains viij.

M. Div. in pulv.

To be taken at one time.

To Abort a Felon.—

Cover the end of the finger with cotton saturated with alcohol, and then exclude the air by drawing over all a rubber finger cot.

Gastric Fermentation.—

Sodii salicylatis .....3jss.
Bismuthi subnitratis .....3j.
Pulv. sacchari .....grains xxx.

M. Div. in pulveres xxx.

Sig: One after each meal.

Asthma.—

Adrenalin, administered hypodermically, sometimes gives prompt relief to asthmatic paroxysms. Occasionally it fails, when resort to morphine and atropine may be necessary.

Follicular Tonsillitis.—

Iodi .....grains. iij.
Potassii iodidi .....grains v.
Acidi trichloracetici.....grains vij.
Glycerini .....fl. 3iv.
Aquæ .....fl. 3iv.

M. Sig.: Apply with a brush several times daily.

Gruber's Otologic Bougies—

Carbolic acid.....	7	minims.
Fluid extract opium.....	10	minims.
Cocaine	3	grains.
Atropine sulphate.....	1½	grains.
Water	52	minims.
Gelatin	18	grains.
Glycerin 158		grains.

Make into 42 bougies.

Pleurisy.—

Try applications of a mixture of equal parts of guaiacol and camphorated oil in the next case of pleuritic pain. If there is a tendency to depression, replace half the guaiacol with methyl salicylate. This makes a good remedy to rub into "catching" muscles.

Acute Bronchitis.—

Codeinæ .....grains ij.
Potassii citratis .....3jss.
Spt. etheris nitrosi.....3ij.
Syrupi ipecac.....3ij.
Syrupi lactucarii .....ad 3iij.

Sig.: A half teaspoonful to one teaspoonful every three hours (in young children).

Psoriasis.—

Mercurial ointments, especially ammoniated mercury, are valuable. Tar is commended, and an excellent formula is as follows:

Ichthyolis .....m xlv.
Acidi salicylici .....grains xv.
Picis liquidæ .....m xlv.
Acidi pyrogallici.....grains xxx.
Adeps lanæ .....5vi.
Petrolati .....3ii.
Ol. lavandulæ .....gtt. v.

Some of the sulphur formulæ are valuable in very chronic cases, as is also the sulphur bath.

Chronic Cystitis.—

Thoration, in *Paris Médical* for June 22, 1912, is credited with the following formulas for use in chronic cystitis:

Acidi benzoici	2 grams.
Glycerini	5 grams.
Acaciæ	8 grams.
Syrupi	30 grams.
Aquæ destillatæ 120	grams.

M ft. solutio. Sig.: The whole of this is to be taken within two days in tablespoonful doses.

Quininæ sulphatis	1 gram.
Aquæ destillatæ 300	grams.

M. ft. solutio. Sig.: This is to be used as a bladder injection. One-third of it is to be used at a time, preceded by an injection of 100 grams of tepid water.

NOTES AND MISCELLANY.

MORE THAN AN ALTERATIVE.

The term "alterative" is too narrow and indefinite to apply to iodine, as it is now manufactured in a free and active state.

The action of Burnham's Soluble Iodine has been fully demonstrated as one of the most definite and dependable therapeutic facts. Its ability to reduce chronic inflammation, stimulate tissue changes and correct all abnormal processes are too well known to admit of controversy.

GET OUT OF THE RUT.

R. A. Walker, in the *Virginia Medical Semi-Monthly*, complains that most physicians become victims of a deadening routine. When they have exhausted their immediate stock of medical knowledge, they rest upon their oars with the comforting conviction that they have reached the limit of medical science and that nothing more can be done. It seems never to occur to them that refractory and desperate cases offer a most appropriate field for experimental therapeutics. Here is the opportunity for breaking new ground and for testing therapeutic theories. The men who have the originality and the self-reliance to rise to the occasion are the ones who contribute to the progress of medical science. "Get out of the rut; read, think, experiment independently; try all things, prove all things, and hold fast to that which is good."

GYNECOLOGIC THERAPEUTICS.

The tremendous growth of gynecology in recent years has been confined especially to surgical therapeutics. Even Skene several years ago regretted that medical treatment of female disorders does not receive its merited attention. The practitioner is, therefore, compelled to rely chiefly on remedies which have been tested by clinicians with years of experience, having the best opportunity for observation. The most frequent diseases of women are those that arise from functional disturbances of the pelvic organs. For these we call the attention of the medical profession to Dioviburnia, a combination of vegetable drugs, which has stood the test of many years as an efficient tonic and sedative to the female generative organs.

AMERICAN SURGICAL ASSOCIATION.

Committee on the Treatment of Fractures of the Long Bones.

The American Surgical Association has appointed a committee, consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntington, San Francisco, Cal.; John B. Walker, New York City; Edward Martin, Philadelphia, and John B. Roberts, chairman, 313 South Seventeenth Street, Philadelphia, to report on the operative and non-operative treatment of closed and open fractures of the long bones and the value of radiography in the study of these injuries. Surgeons who have published papers relating to this subject within the last ten years will confer a favor by sending two reprints to the chairman of the committee. If no reprints are available, the titles and places of their publication are desired.

JOHN B. ROBERTS, Chairman,
313 S. 17th Street, Philadelphia.

INSANITY IN CHILDREN.

C. Holmes, in the *Medical Record*, states that the anatomically and physiologically unstable nerve centers of the vigorous growing child offer a vulnerable field on which the maladjustments and abuses of a crowded, hustling city life

may do irreparable damage. The ability to recognize the abnormal from the normal mental excitement, to appreciate that a certain form of unrest is developing as a direct result of distressing bodily or home conditions, to decide whether or not the child's conduct is due to his being fundamentally defective, to recognize the excitement of fatigue from overstudy —these are some of the things which should constitute the equipment of prophylactic workers in the homes and in the schools. Exceptional opportunities for the observation of incipient mental diseases, especially among children, are furnished by every large general hospital, but unless the hospital is equipped with special wards, specially trained nurses, and medical men for the care of such patients, these cases commonly pass through unnoticed.

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THE X-PAY TREATMENT OF GRAVES' DISEASE.

Hooton in the *British Medical Journal* writes on the X-ray treatment of goitre.

Summing the whole matter up one may say that the noteworthy features are the lessening, often rapid, of the nervousness, the dyspnea, the tachycardia, and the tremor; the patient's weight increases, and there is a return, in a greater or less degree, to a normal enjoyment of life.

One defect undoubtedly did, and to a smaller extent still does, exist—namely, the soreness of the skin of the neck, a true radiodermatitis, present as a rule only for a few weeks, during the earlier part of the treatment, but unfortunately giving place to a permanent brown stain and patches of dilated capillaries, which to those who wish to wear low-necked dresses is necessarily a great disadvantage. These difficulties, however, are being overcome by filtering out the softer rays which are responsible for the mischief to the skin; and after all, according to Hooton, this is not a great price to pay for relief from a distressing disorder.

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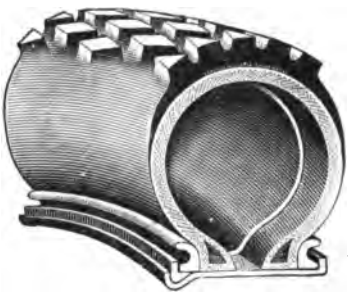

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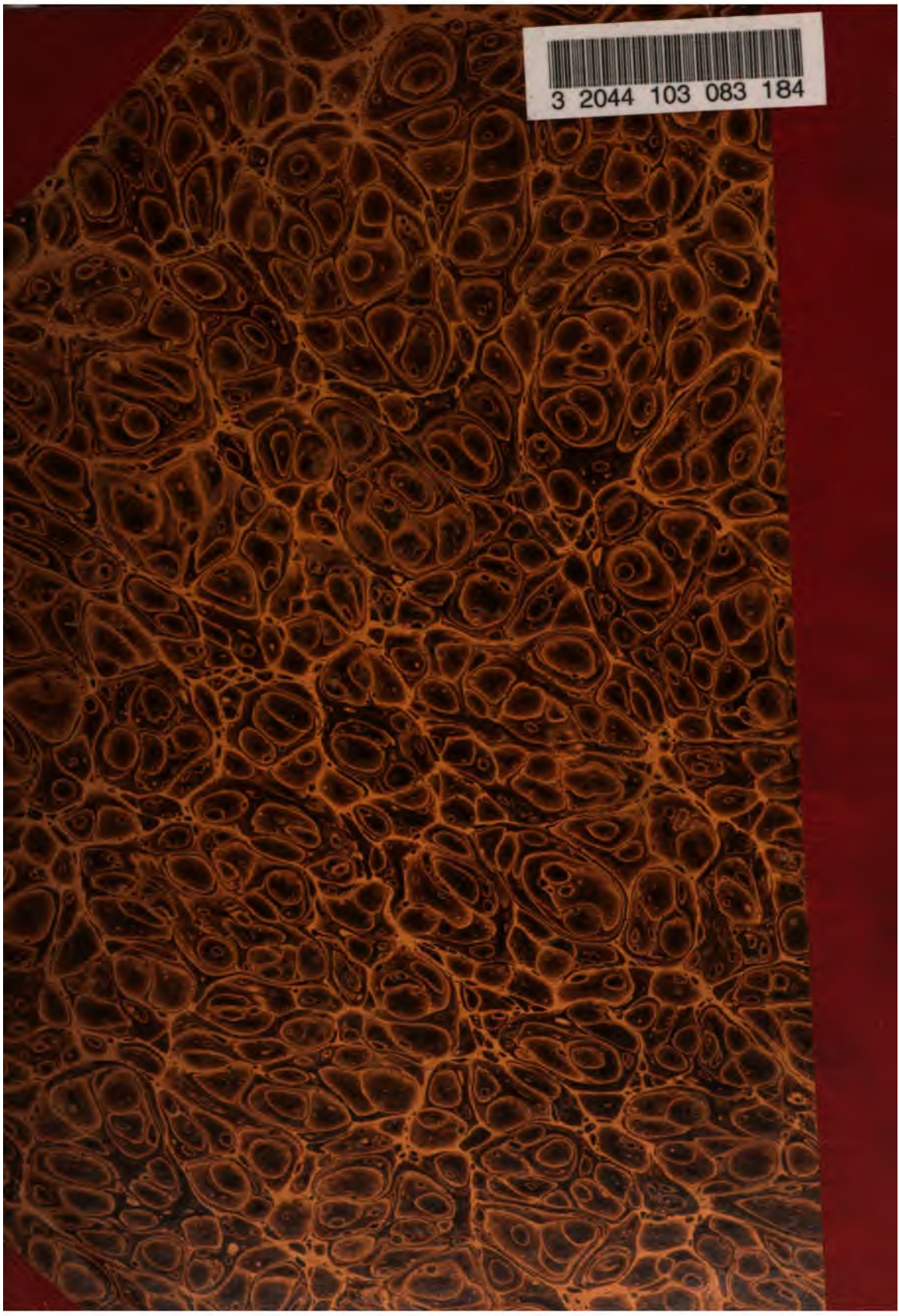
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